

BETHLEHEM OPEN-WEB STEEL JOISTS

"S" Series

- Design based upon 20,000 psi working stress
- Available January 1, 1959

PROPERTIES

ACCESSORIES

LOADING TABLES

ARCHITECTS' SPECIFICATIONS

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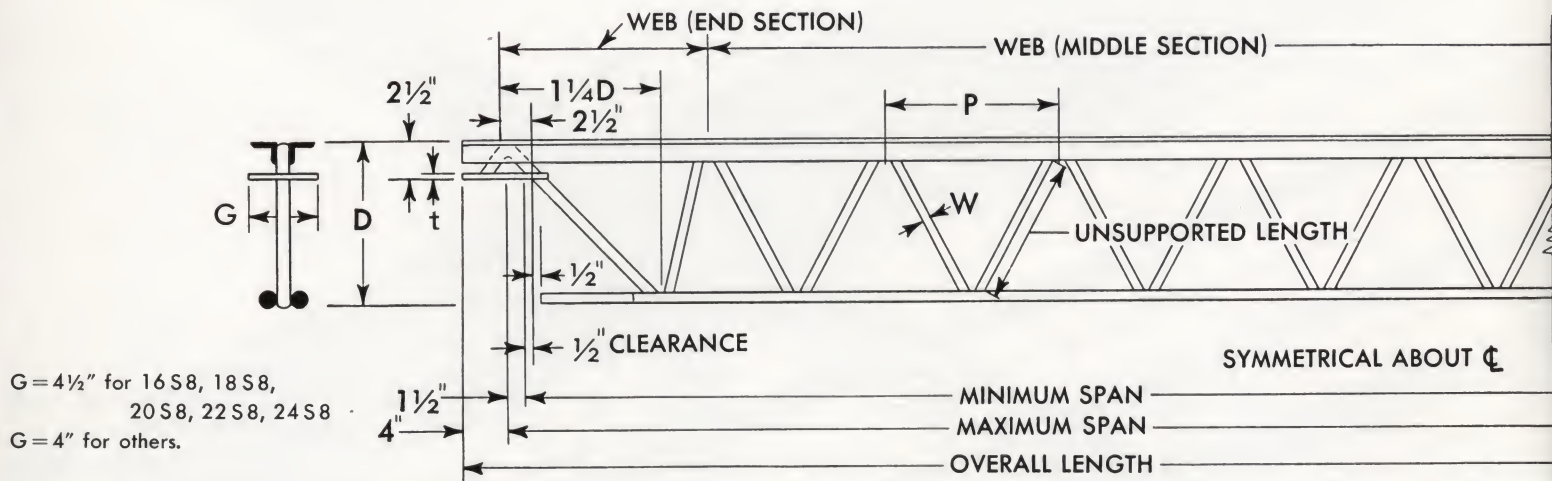
OPEN-WEB STEEL JOIST CONSTRUCTION

Floor construction shall consist of a poured in place concrete slab $2\frac{1}{2}$ in. thick (or other specified thickness) supported by properly designed steel joist spaced not over 24 in. on centers.

Roof construction shall consist of poured or precast concrete or gypsum, steel deck, wood plank or other suitable materials supported by properly designed steel joists spaced not to exceed the safe span of the roof material.

Ceiling construction shall consist of attached or suspended metal lath and plaster or acoustical tile.

DIMENSIONS AND PROPERTIES OF

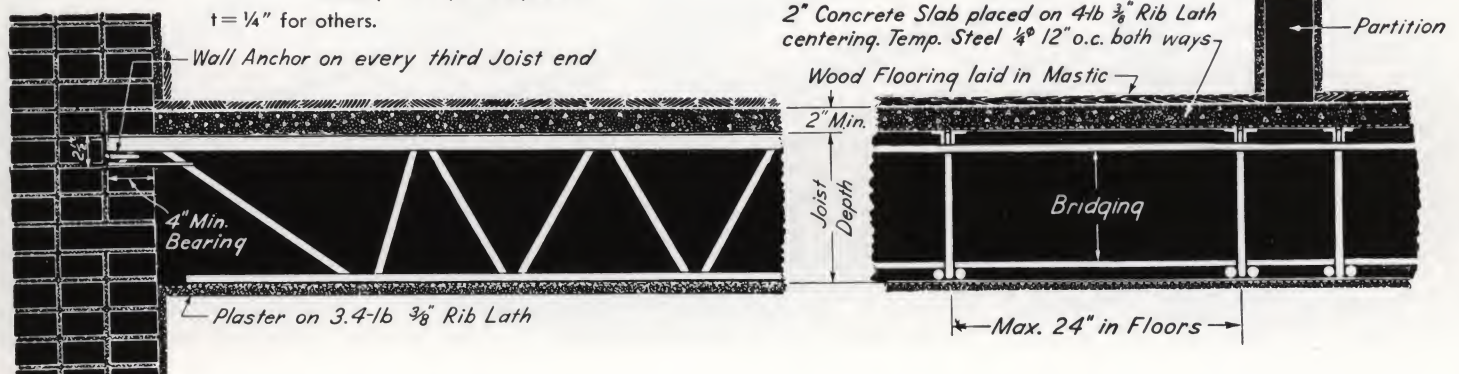


As shown above, ceiling extensions, when required, are provided by extending one bottom chord bar at each end of the joist.

$t = \frac{1}{2}"$ for 16 S8, 18 S8, 20 S8, 22 S8, 24 S8

$t = \frac{3}{8}"$ for 14 S6, 14 S7, 16 S6, 16 S7, 18 S6, 18 S7, 20 S6, 20 S7, 22 S7

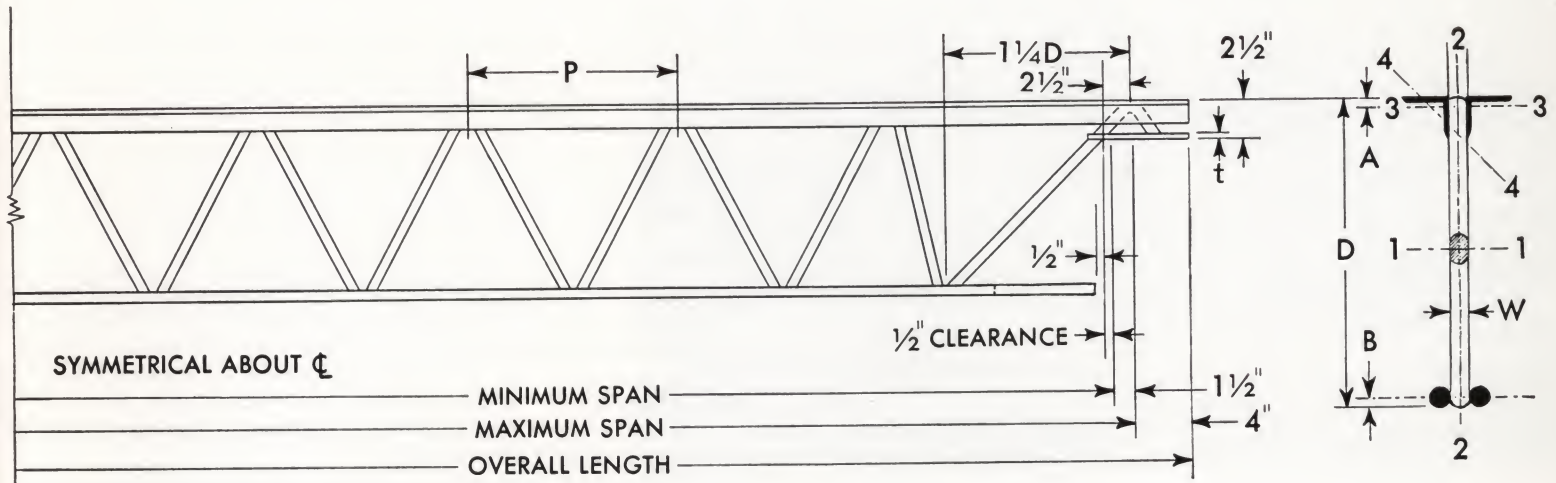
$t = \frac{1}{4}"$ for others.



Modern arc-welding or resistance-welding equipment is used in fabricating this joist. The top chord consists of pairs of hot-rolled angles, the bottom chord of pairs of round bars with the web made of a plain, round bar, bent to form a Warren-type truss. Ends of the joists are supported on plates arc-welded in place and located to provide a $2\frac{1}{2}$ -in. standard depth of bearing.

Bethlehem Open-Web Joists, "S" Series, are fully approved by, and subject to the quality control of, the Steel Joist Institute.

BETHLEHEM "S" SERIES JOISTS



Properties of Chords

Type	Nominal Depth "D"	Top Chord 2 L's					Bottom Chord 2 - Bars				Web End Section			Web Middle Section			* Moment of Inertia Axis 1-1	S.J.I. Std. Properties		Approx Weight Per Foot **
		Angles	Area	r Axis 4-4	s Axis 3-3	"A"	Diam	Area	"B"	"P"	Diam W	Area	r Axis 2-2	Diam W	Area	r Axis 2-2		Resist. Moment	End Reaction	
	in.	in.	in. ²	in.	in. ³	in.	in.	in. ²	in.	in.	in.	in. ²	in.	in.	in. ²	in.	in. ⁴	in.-lb	lb	lb
8 S 2	8	1x1x $\frac{1}{8}$	.46	.20	.062	.30	1 $\frac{5}{32}$	.345	.234	14	1 $\frac{7}{32}$	.222	.133	1 $\frac{5}{32}$	.173	.117	11.79	52,500	1900	4.0
10 S 2	10	1x1x $\frac{1}{8}$	.46	.20	.062	.30	1 $\frac{5}{32}$	.345	.234	14	1 $\frac{9}{32}$	.277	.148	1 $\frac{5}{32}$	.173	.117	17.72	65,000	1900	4.5
10 S 3	10	1 $\frac{1}{4}$ x1 $\frac{1}{4}$ x $\frac{1}{8}$	.60	.25	.098	.36	1 $\frac{7}{32}$	.443	.266	18	1 $\frac{9}{32}$	.277	.148	1 $\frac{5}{32}$	.173	.117	22.46	83,000	2000	5.0
10 S 4	10	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{1}{8}$	.72	.30	.148	.42	1 $\frac{9}{32}$	.554	.297	18	1 $\frac{9}{32}$	.277	.148	1 $\frac{7}{32}$	.222	.133	27.13	103,000	2200	6.0
12 S 3	12	1 $\frac{1}{4}$ x1 $\frac{1}{4}$ x $\frac{1}{8}$	.60	.25	.098	.36	1 $\frac{7}{32}$	.443	.266	18	2 $\frac{1}{32}$	.338	.164	1 $\frac{7}{32}$	.222	.133	33.10	100,000	2200	5.0
12 S 4	12	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{1}{8}$	.72	.30	.148	.42	1 $\frac{9}{32}$	.554	.297	18	2 $\frac{1}{32}$	.338	.164	1 $\frac{7}{32}$	.222	.133	40.01	125,000	2300	6.0
12 S 5	12	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{1}{8}$	.84	.35	.205	.48	2 $\frac{1}{32}$	.676	.328	18	2 $\frac{1}{32}$	.338	.164	1 $\frac{7}{32}$	.222	.133	47.18	149,000	2500	6.5
12 S 6	12	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{3}{16}$	1.06	.29	.204	.44	2 $\frac{3}{32}$	.811	.359	18	2 $\frac{1}{32}$	.338	.164	1 $\frac{7}{32}$	.222	.133	57.88	182,000	2800	8.0
14 S 4	14	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{1}{8}$	.72	.30	.148	.42	1 $\frac{9}{32}$	.554	.297	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	55.39	147,000	2600	6.5
14 S 5	14	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{1}{8}$	.84	.35	.205	.48	2 $\frac{1}{32}$	.676	.328	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	65.43	175,000	2900	7.5
14 S 6	14	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{3}{16}$	1.06	.29	.204	.44	2 $\frac{3}{32}$	.811	.359	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	80.30	214,000	3100	8.0
14 S 7	14	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{3}{16}$	1.24	.34	.290	.51	2 $\frac{5}{32}$	.959	.391	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	93.20	251,000	3400	9.5
16 S 5	16	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{1}{8}$	.84	.35	.205	.48	2 $\frac{1}{32}$	.676	.328	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	86.70	202,000	3000	7.5
16 S 6	16	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{3}{16}$	1.06	.29	.204	.44	2 $\frac{3}{32}$	.811	.359	18	2 $\frac{3}{32}$	.406	.180	1 $\frac{9}{32}$	.277	.148	106.40	242,000	3300	8.5
16 S 7	16	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{3}{16}$	1.24	.34	.290	.51	2 $\frac{5}{32}$	.959	.391	18	2 $\frac{3}{32}$	.406	.180	2 $\frac{1}{32}$	.338	.164	123.70	290,000	3600	10.0
16 S 8	16	2x2x $\frac{3}{16}$	1.42	.39	.380	.57	2 $\frac{7}{32}$	1.118	.422	18	2 $\frac{3}{32}$	.406	.180	2 $\frac{1}{32}$	.338	.164	141.33	336,000	3900	11.5
18 S 6	18	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{3}{16}$	1.06	.29	.204	.44	2 $\frac{3}{32}$	.811	.359	20	2 $\frac{5}{32}$	.479	.195	2 $\frac{1}{32}$	.338	.164	136.18	272,000	3600	9.0
18 S 7	18	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{3}{16}$	1.24	.34	.290	.51	2 $\frac{5}{32}$	.959	.391	20	2 $\frac{5}{32}$	.479	.195	2 $\frac{1}{32}$	.338	.164	158.52	328,000	3800	10.0
18 S 8	18	2x2x $\frac{3}{16}$	1.42	.39	.380	.57	2 $\frac{7}{32}$	1.118	.422	20	2 $\frac{5}{32}$	.479	.195	2 $\frac{1}{32}$	.338	.164	181.58	380,000	4100	11.5
20 S 6	20	1 $\frac{1}{2}$ x1 $\frac{1}{2}$ x $\frac{3}{16}$	1.06	.29	.204	.44	2 $\frac{3}{32}$	.811	.359	22	2 $\frac{5}{32}$	.479	.195	2 $\frac{3}{32}$	.406	.180	169.62	295,000	3700	9.5
20 S 7	20	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{3}{16}$	1.24	.34	.290	.51	2 $\frac{5}{32}$	.959	.391	22	2 $\frac{5}{32}$	.479	.195	2 $\frac{3}{32}$	.406	.180	197.68	358,000	3900	10.5
20 S 8	20	2x2x $\frac{3}{16}$	1.42	.39	.380	.57	2 $\frac{7}{32}$	1.118	.422	22	2 $\frac{5}{32}$	.479	.195	2 $\frac{3}{32}$	.406	.180	226.64	420,000	4200	12.0
22 S 7	22	1 $\frac{3}{4}$ x1 $\frac{3}{4}$ x $\frac{3}{16}$	1.24	.34	.290	.51	2 $\frac{5}{32}$	.959	.391	24	2 $\frac{7}{32}$	.559	.211	2 $\frac{5}{32}$	.479	.195	241.15	385,000	4000	11.5
22 S 8	22	2x2x $\frac{3}{16}$	1.42	.39	.380	.57	2 $\frac{7}{32}$	1.118	.422	24	2 $\frac{7}{32}$	.559	.211	2 $\frac{5}{32}$	.479	.195	276.70	456,000	4300	12.5
24 S 8	24	2x2x $\frac{3}{16}$	1.42	.39	.380	.57	2 $\frac{7}{32}$	1.118	.422	24	2 $\frac{9}{32}$	.645	.227	2 $\frac{7}{32}$	.559	.211	331.78	500,000	4500	13.0

Actual depths are nominal depths except for the 8 in. which is $8\frac{1}{4}$ in.

* Of chords only.

** Approximate weights per linear foot of joist include accessories and are for design purposes only.

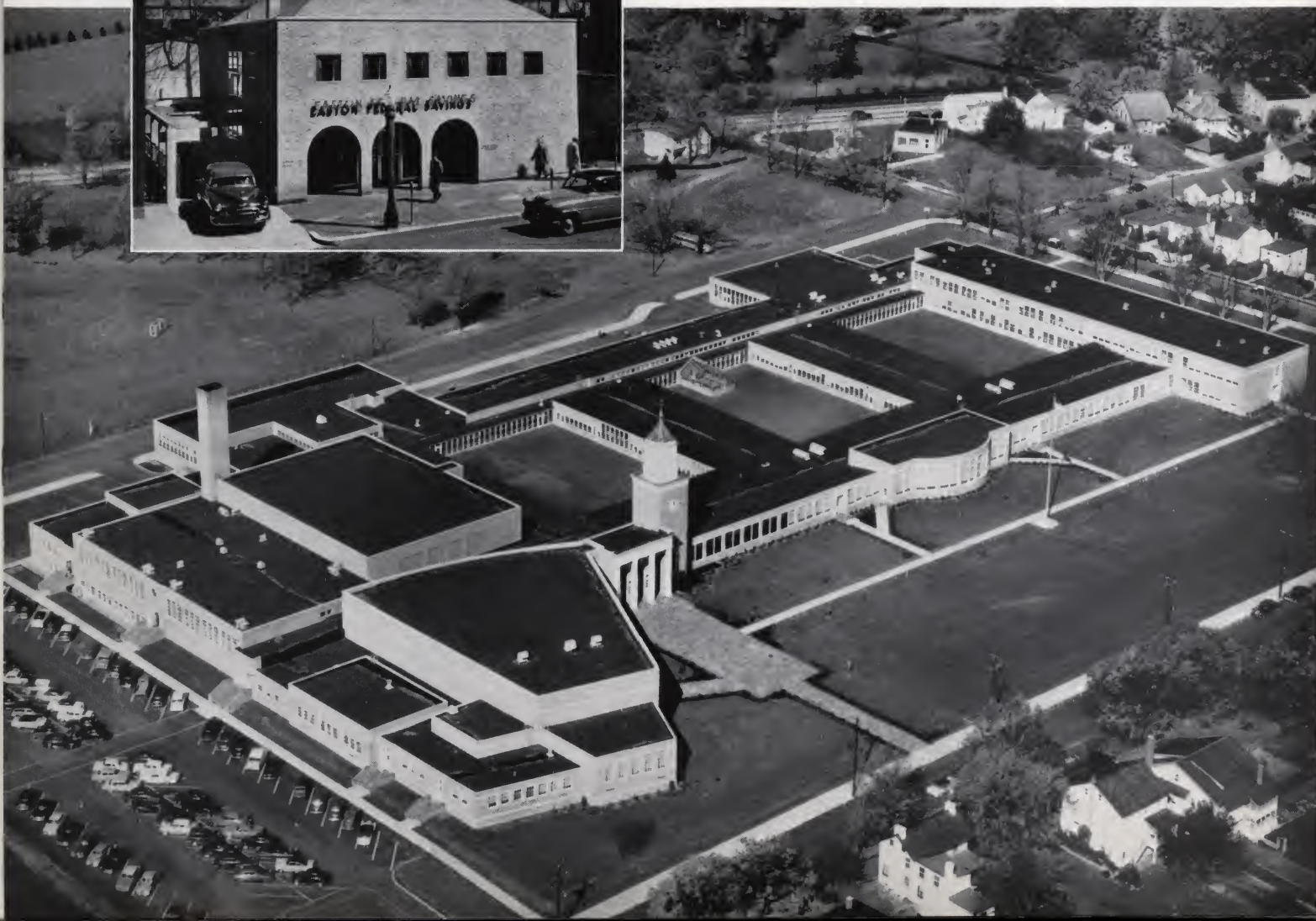


(left) Seven-story residence wing, Peoria, Ill., Y.M.C.A. contains Bethlehem Open-Web Steel Joists. Architects: Gregg and Briggs; general contractor: Fred Harber's Sons; both of Peoria.

(insert) Steel joists in bank building in Easton, Pa., contribute to permanent fire-resistant construction. Architect: Hugh Moore, Jr., Easton; general contractor: Collins and Maxwell, Inc., also of Easton.



(bottom) Bethlehem joists are ideal for floor and roof structures in schools such as the Central Bucks School, Bucks County, Pa. Architects: Davis, Dunlap and Carver; general contractor: Wark and Co. Both are Philadelphia firms.



ARCHITECTS' SPECIFICATIONS

OPEN-WEB STEEL JOISTS

SCOPE—The contractor shall furnish and install all material to complete the open-web steel joist framing as shown on the drawings or as specified herein. The material shall include joists, bridging, anchors, headers, centering, temperature reinforcing in the concrete and miscellaneous steel framing between joists, not exceeding the joist spacing measured perpendicular to the joists.

JOISTS—Joists shall be Bethlehem Open-Web Steel Joists "S" Series or "L" Series, as approved by the Steel Joist Institute or other Institute approved joists.

The steel shall be made in open hearth or electric furnace and shall conform to the American Society for Testing Materials Standard Specifications for Steel for Buildings and Bridges ASTM A7.

Joists, "S" Series, shall receive a shop coat of asphalt base paint before shipment.

Joists, "L" Series, shall receive a shop coat of zinc chromate primer before shipment.

DESIGN—The design of steel joists shall conform to the most recent requirements of the Steel Joist Institute and have current approval of the Steel Joist Institute. The joist supplier shall furnish evidence of such approval, if required.

SPAN—The clear span of joists shall not exceed 24 times the depth. In floor construction, for spans greater than 32 ft the clear span shall not exceed 20 times the depth, and for spans less than 32 ft the clear span shall not exceed 21 times the depth.

LOCATION—In wall bearing construction, the clear distance between wall and first joist shall be approximately 4 in., for "S" Series joists, and approximately 6 in. for "L" Series joists.

In steel frame construction, the first joist shall be a full space from spandrel or wall beams. Where tie beams are at the same elevation as the joists and have moment of inertia and resisting moment not less than those of the joists, adjacent joists shall be a full space from such beams.

Where partitions extend across joists their weight must be included in the design load.

Where partitions occur parallel to joists an extra typical joist shall be provided under such partitions if necessary.

BEARING—Where joists rest on masonry or concrete supports, the length of bearing shall be not less than 4 in. for "S" Series joists and 6 in. for "L" Series joists.

Where joists rest on steel supports, the length of bearing shall be not less than 2½ in. for "S" Series joists and 4 in. for "L" Series joists, except where opposite joists butt over a narrow steel support and positive attachment is provided by welding or bolting, a shorter bearing length may be used if permissible stresses are not exceeded.

ANCHORS—Where joists rest on masonry walls the ends shall be thoroughly bedded in mortar. Every third "S" Series joist in floors and every "S" Series joist in roofs shall be anchored thereto with a ¾-in. round steel bar, and every "L" Series joist shall be anchored thereto with a ¾-in. round steel bar.

Where joists rest on steel beams, the ends of "S" Series joists shall be attached thereto by two welds 1 in. long, a ½-in. diameter bolt or a ¾-in. round steel anchor fastened over the beam flange. The ends of "L" Series

joists shall be connected thereto with two ¾-in. diameter bolts or welds of equal strength.

BRIDGING—For "S" Series joists, bridging shall consist of continuous horizontal bars not less than ½ in. round, 1 bar at top chord and 1 bar at bottom chord, attached by welding or by equal mechanical means. Bridging lines shall be located according to the following table.

Span	Number of Lines of Bridging
Up to 14 ft	one line near middle of span
14 ft to 21 ft	two lines at ⅓ points of span
21 ft to 32 ft	three lines at ¼ points of span
32 ft to 40 ft	four lines at ⅓ points of span
40 ft to 48 ft	five lines at ⅓ points of span

For "L" Series joists bridging shall consist of bolted cross bracing composed of not less than 1¼ x 1¼ x ⅓ angles. The l/r between connections shall not exceed 200. The maximum spacing of bridging lines for the different size joists shall be as listed below:

"L" Series Joist Type	Maximum Spacing of Bridging Lines
L03 to L08	10 ft-0 in.
L09 to L16	12 ft-0 in.
L17 to L19	16 ft-0 in.

Bridging shall be completely installed before any construction loads are placed upon the joists. The ends of all bridging lines terminating at walls or beams shall be anchored thereto.

CENTERING—Centering for poured concrete floor and roof slabs shall be Bethlehem Slabform. Slabform shall be furnished either unpainted or galvanized as required, and shall be attached to every joist at intervals not exceeding 24 in., in accordance with the manufacturer's instructions. If flexible centering is used provide sufficient blocking to prevent lateral strain on the top chord of the joists.

CAMBER—All "L" Series joists shall have camber.

INSPECTION—All steel joists shall be thoroughly inspected by the manufacturer before shipment to make certain that materials and workmanship conform to the requirements of these specifications. The manufacturer shall provide space in his shop for outside inspection if required.

HANDLING AND ERECTION—Care shall be exercised at all times to avoid damage through careless handling. Joists shall be unloaded from truck or car and stacked either by hand or by crane. Dumping onto the ground shall not be permitted.

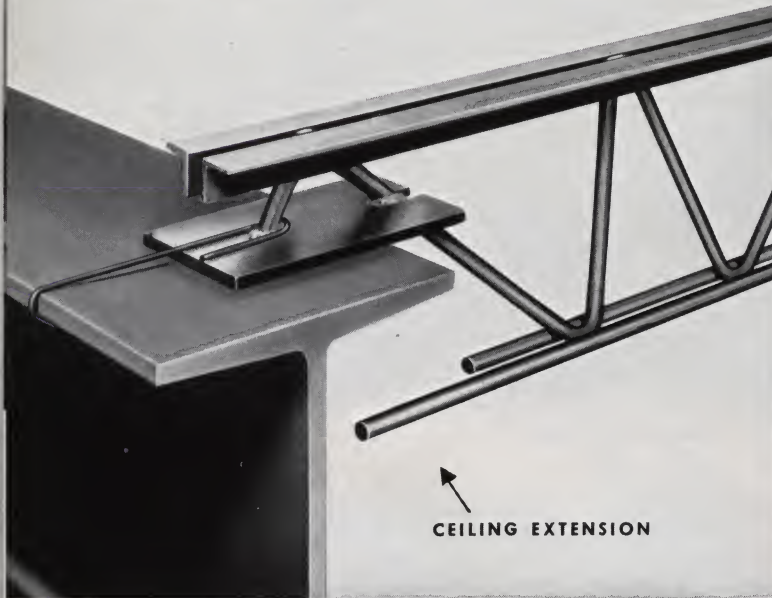
As soon as joists are erected all bridging shall be completely installed and joists permanently fastened into place before the application of any loads.

In the case of "L" Series joists added precautions shall be taken that the hoisting cables be attached to top chord at panel points nearest the third points of the span, and not be released during erection until the bridging line nearest mid-span is installed and where joists are bottom bearing their ends have been restrained laterally.

During the construction period care shall be exercised to avoid excessive concentrated loads. The construction contractor shall provide means for the adequate distribution of such loads so that the capacity of any joist is not exceeded.

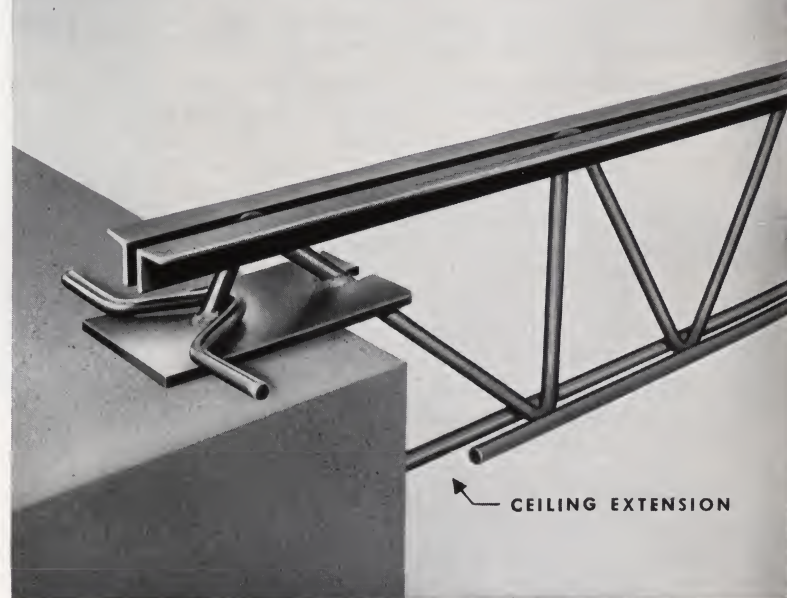
CONSTRUCTION ACCESSORIES FOR

BEAM ANCHOR



Welded anchorage is desirable where joists are supported on steel beams. When welding facilities are not available, beam anchors can be used. They are made of $\frac{3}{16}$ -in. steel rod and can be installed with an ordinary hammer.

END WALL ANCHOR



Where masonry or concrete walls support joists, rod anchors are used to secure the bearing ends to the walls. These anchors are made of $\frac{3}{8}$ -in. steel rod placed through the end of the joist and built into the wall.

HORIZONTAL BRIDGING



Bridging should be installed immediately after the joists are placed in the structure. This holds the joists in correct alignment and provides the necessary lateral bracing during construction.

SAG RODS



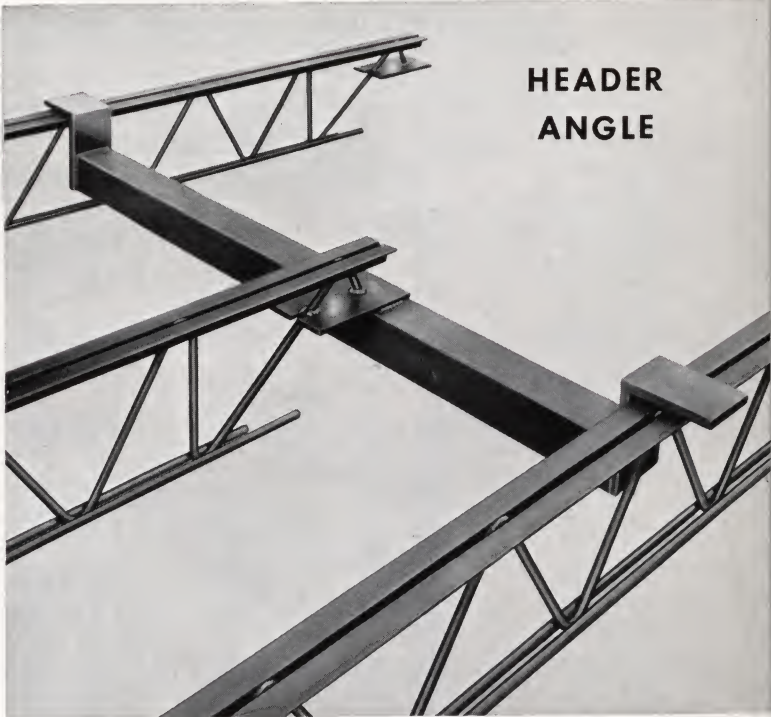
Where joists are used as purlins in a sloping roof, sag rods are required to transmit a component of the roof load to the ridge line.

BETHLEHEM "S" SERIES JOISTS



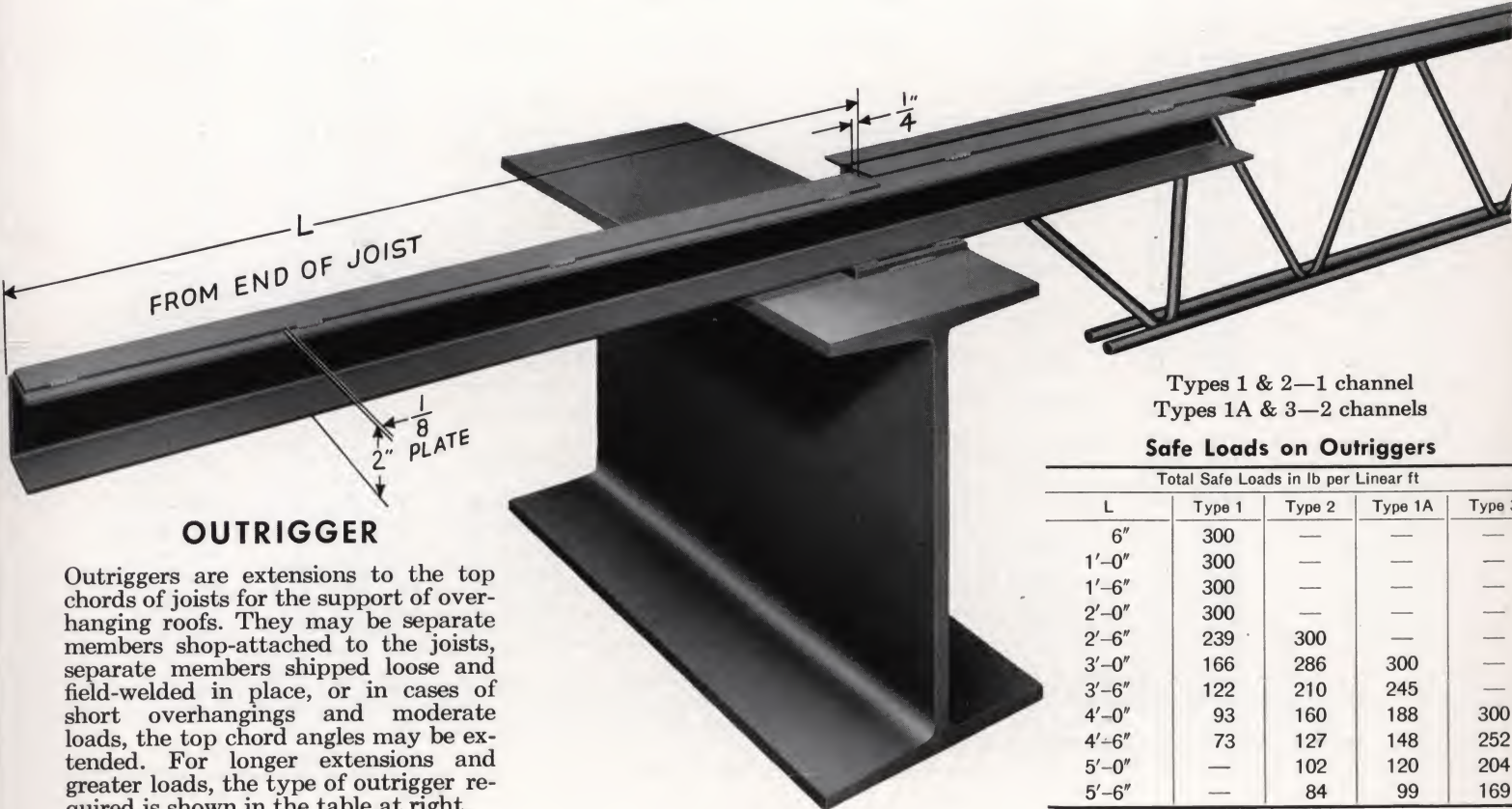
BRIDGING ANCHOR

Bridging anchors are required to secure the ends of bridging lines into masonry walls. Where a steel beam occurs at the end of a floor panel, however, the ends of bridging lines are field welded directly to the beam.



HEADER ANGLE

Small floor openings for shafts and ducts can be framed with header angles. The tail joist is attached to the header angle with bolts or beam anchors, which hold the header in position until the floor slab is placed on the joists.



OUTRIGGER

Outriggers are extensions to the top chords of joists for the support of overhanging roofs. They may be separate members shop-attached to the joists, separate members shipped loose and field-welded in place, or in cases of short overhangings and moderate loads, the top chord angles may be extended. For longer extensions and greater loads, the type of outrigger required is shown in the table at right.

Types 1 & 2—1 channel
Types 1A & 3—2 channels

Safe Loads on Outriggers

Total Safe Loads in lb per Linear ft				
L	Type 1	Type 2	Type 1A	Type 3
6"	300	—	—	—
1'-0"	300	—	—	—
1'-6"	300	—	—	—
2'-0"	300	—	—	—
2'-6"	239	300	—	—
3'-0"	166	286	300	—
3'-6"	122	210	245	—
4'-0"	93	160	188	300
4'-6"	73	127	148	252
5'-0"	—	102	120	204
5'-6"	—	84	99	169

"S" SERIES JOIST SIZES AND SPACINGS

RECOMMENDED FOR MAXIMUM ECONOMY AND STIFFNESS IN FLOORS

Joists listed first provide maximum economy.
When the joist listed first is in light type the joist listed second is recommended for stiffness.

When the joist listed first is in bold type it is recommended for stiffness and the one listed second is satisfactory for stiffness in the next shallowest depth.

CLEAR SPAN	TOTAL LOAD IN POUNDS PER SQUARE FOOT						
	80	90	100	110	120	130	140
11'-0"	852 @ 24	852 @ 24	852 @ 24	852 @ 24	852 @ 24	852 @ 24	852 @ 24
12'-0"	852 @ 24	852 @ 24	852 @ 24	852 @ 24	852 @ 24	1052 @ 24 852 @ 22	1052 @ 24 852 @ 20
13'-0"	852 @ 24	852 @ 24	852 @ 24	1052 @ 24 852 @ 22	1052 @ 24 852 @ 20	1052 @ 23 852 @ 19	1053 @ 24 852 @ 17
14'-0"	852 @ 24	852 @ 24	1052 @ 24 852 @ 21	1052 @ 24 852 @ 19	1053 @ 24 852 @ 17	1053 @ 24 852 @ 16	1053 @ 24 852 @ 14
15'-0"	1052 @ 24	1052 @ 24	1052 @ 23	1053 @ 24	1053 @ 24	1253 @ 24 1053 @ 22	1253 @ 24 1054 @ 24
16'-0"	1052 @ 24	1053 @ 24	1053 @ 24	1253 @ 24 1053 @ 23	1253 @ 24 1054 @ 24	1253 @ 24 1054 @ 24	1253 @ 22 1054 @ 24
17'-0"	1053 @ 24	1053 @ 24	1253 @ 24 1053 @ 23	1253 @ 24 1054 @ 24	1253 @ 23 1054 @ 23	1254 @ 24 1054 @ 22	1254 @ 24 1054 @ 20
18'-0"	1053 @ 24 1253 @ 24	1253 @ 24	1253 @ 24	1253 @ 22	1254 @ 24	1254 @ 24	1454 @ 24 1255 @ 24
19'-0"	1253 @ 24	1253 @ 24	1253 @ 22	1254 @ 24	1454 @ 24 1254 @ 23	1454 @ 24 1255 @ 24	1454 @ 23 1255 @ 22
20'-0"	1253 @ 24	1253 @ 22	1254 @ 24	1454 @ 24 1255 @ 24	1454 @ 24 1255 @ 23	1454 @ 22 1255 @ 22	1455 @ 24 1256 @ 24
21'-0"	1254 @ 24	1254 @ 24	1454 @ 24 1255 @ 24	1454 @ 24 1255 @ 24	1454 @ 22 1255 @ 22	1655 @ 24 1455 @ 24	1655 @ 24 1455 @ 22
22'-0"	1254 @ 24 1454 @ 24	1454 @ 24	1454 @ 24	1454 @ 22	1655 @ 24 1455 @ 24	1655 @ 24 1455 @ 22	1655 @ 23 1456 @ 24
23'-0"	1454 @ 24	1454 @ 24	1454 @ 22	1455 @ 24	1655 @ 24 1455 @ 22	1655 @ 23 1456 @ 24	1655 @ 21 1456 @ 23
24'-0"	1454 @ 24	1454 @ 22	1455 @ 24	1655 @ 24 1455 @ 22	1655 @ 23 1456 @ 24	1655 @ 21 1456 @ 22	1856 @ 24 1655 @ 20
25'-0"	1455 @ 24 1655 @ 24	1455 @ 24 1655 @ 24	1655 @ 24	1655 @ 23	1655 @ 21	1856 @ 24 1656 @ 23	1856 @ 24 1656 @ 22
26'-0"	1455 @ 24 1655 @ 24	1655 @ 24	1655 @ 24	1655 @ 21	1656 @ 24	1856 @ 24 1656 @ 22	2056 @ 24 1856 @ 23
27'-0"	1455 @ 24 1655 @ 24	1655 @ 24	1655 @ 22	1656 @ 24	1856 @ 24 1656 @ 22	2056 @ 24 1856 @ 23	2056 @ 23 1857 @ 24
28'-0"	1655 @ 24	1655 @ 23	1656 @ 24	1856 @ 24 1656 @ 22	2056 @ 24 1856 @ 23	2056 @ 23 1857 @ 24	1857 @ 23 1658 @ 24
29'-0"	1655 @ 24 1856 @ 24	1655 @ 21 1856 @ 24	1856 @ 24	2056 @ 24 1856 @ 23	2056 @ 23 1857 @ 24	2057 @ 24 1857 @ 24	2057 @ 23 1857 @ 22
30'-0"	1656 @ 24 1856 @ 24	1656 @ 24 1856 @ 24	1856 @ 24	2056 @ 24 1856 @ 22	1857 @ 24	2057 @ 24 1857 @ 22	2058 @ 24 1858 @ 23
31'-0"	1656 @ 24 1856 @ 24	1856 @ 24	2056 @ 24 1856 @ 22	1857 @ 24	2257 @ 24 2257 @ 24	2257 @ 23 2058 @ 24	2257 @ 22 2058 @ 23
32'-0"	1856 @ 24 2056 @ 24	2056 @ 24	2056 @ 23	1857 @ 23 2057 @ 24	2257 @ 24 2257 @ 23	2257 @ 24 2058 @ 24	2257 @ 23 2058 @ 22
33'-0"	2056 @ 24	2056 @ 24	2057 @ 24	2057 @ 24	2257 @ 24 2058 @ 24	2258 @ 24 2058 @ 23	2458 @ 23 2058 @ 21
34'-0"	2257 @ 24	2257 @ 24	2257 @ 24	2257 @ 24	2257 @ 22	2458 @ 24 2258 @ 23	2458 @ 22 2258 @ 21
35'-0"	2257 @ 24	2257 @ 24	2257 @ 24	2257 @ 23	2258 @ 24	2458 @ 23 2258 @ 22	2458 @ 22 2258 @ 21
36'-0"	2257 @ 24	2257 @ 24	2257 @ 23	2258 @ 24	2458 @ 24 2258 @ 23	2458 @ 23 2258 @ 21	2458 @ 21 2258 @ 20
37'-0"	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 22	2458 @ 20
38'-0"	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 23	2458 @ 21	2458 @ 19
39'-0"	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 21	2458 @ 20	2458 @ 18
40'-0"	2458 @ 24	2458 @ 24	2458 @ 24	2458 @ 22	2458 @ 20	2458 @ 19	2458 @ 17

To secure stiffer floors it is recommended that the clear span should not exceed 21 times the depth of the joist for spans 32'-0" and less and 20 times the depth of the joist for spans greater than 32'-0".

The Steel Joist Institute specifications permit span depth ratios of 24 for spans up to and including 32'-0" and 20 for spans over 32'-0".

DESIGN TABLE

"S" SERIES STEEL JOISTS

Note: Total safe loads consist of live loads plus dead load plus weight of joist. The dead load averages 40 psf where 2-in. concrete slabs are used, including 10 psf for plastered ceiling.

Maximum deflection for tabulated spans and safe loads will not exceed 1/360th of the span. Tabulated safe loads are based on joists being properly braced laterally as required for standard joist construction.

Design Tensile Stress 20,000 psi.

Joists designed to conform to the standards of the Steel Joist Institute.

Spacings over 24 in. shown to right of heavy vertical line are intended for roof construction only.

To secure stiffer floors it is recommended that the clear span should not exceed 21 times the depth of joist for spans 32'-0" and less, and 20 times the depth of the joist for spans greater than 32'-0".

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																Joist Type No.		
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"		6'-0"	7'-0"
8 S 2	7'-0"	3800	543	465	407	383	362	343	326	310	296	283	272	217	181	155	136	109	90	78	8 S 2
8 S 2	7'-6"	3800	507	435	380	358	338	320	304	290	277	265	254	203	169	145	127	101	84	72	8 S 2
8 S 2	8'-0"	3800	475	407	356	335	317	300	285	271	259	248	238	190	158	136	119	95	79	68	8 S 2
8 S 2	8'-6"	3800	447	383	335	315	298	282	268	255	244	233	224	179	149	128	112	89	74	64	8 S 2
8 S 2	9'-0"	3800	422	362	317	298	281	266	253	241	230	220	211	169	141	121	106	84	70	60	8 S 2
8 S 2	9'-6"	3684	388	333	291	274	259	245	233	222	212	202	194	155	129	111	97	78	65	55	8 S 2
8 S 2	10'-0"	3500	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	8 S 2
10 S 2		3800	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54	10 S 2
10 S 3		4000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	10 S 3
10 S 4		4400	440	377	330	311	293	278	264	251	240	230	220	176	147	126	110	88	73	63	10 S 4
8 S 2	10'-6"	3333	317	272	238	224	211	200	190	181	173	165	159	127	106	91	79	63	53	45	8 S 2
10 S 2		3800	362	310	272	255	241	229	217	207	197	189	181	145	121	103	91	72	60	52	10 S 2
10 S 3		4000	381	327	286	269	254	241	229	218	208	199	191	152	127	109	95	76	63	54	10 S 3
10 S 4		4400	419	359	314	296	279	265	251	239	229	219	210	168	140	120	105	84	70	60	10 S 4
8 S 2	11'-0"	3182	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	8 S 2
10 S 2		3800	345	296	259	244	230	218	207	197	188	180	173	138	115	99	86	69	57	49	10 S 2
10 S 3		4000	364	312	273	257	243	230	218	208	199	190	182	146	121	104	91	73	61	52	10 S 3
10 S 4		4400	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	10 S 4
8 S 2	11'-6"	3043	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	8 S 2
10 S 2		3768	328	281	246	232	219	207	197	187	179	171	164	131	109	94	82	66	55	47	10 S 2
10 S 3		4000	348	298	261	246	232	220	209	199	190	182	174	139	116	99	87	70	58	50	10 S 3
10 S 4		4400	383	328	287	270	255	242	230	219	209	200	192	153	128	109	96	77	64	55	10 S 4
8 S 2	12'-0"	2917	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	8 S 2
10 S 2		3611	301	258	226	212	201	190	181	172	164	157	151	120	100	86	75	60	50	43	10 S 2
10 S 3		4000	333	285	250	235	222	210	200	190	182	174	167	133	111	95	83	67	55	48	10 S 3
10 S 4		4400	367	315	275	259	245	232	220	210	200	191	184	147	122	105	92	73	61	52	10 S 4
12 S 3		4400	367	315	275	259	245	232	220	210	200	191	184	147	122	105	92	73	61	52	12 S 3
12 S 4		4600	383	328	287	270	255	242	230	219	209	200	192	153	128	109	96	77	64	55	12 S 4
12 S 5		5000	417	357	313	294	278	263	250	238	227	218	209	167	139	119	104	83	69	60	12 S 5
12 S 6		5600	467	400	350	330	311	295	280	267	255	244	234	187	156	133	117	93	78	67	12 S 6
8 S 2	12'-6"	2800	224	192	168	158	149	141	134	128	122	117	112	90	75	64	56	45	37	32	8 S 2
10 S 2		3467	277	237	208	196	185	175	166	158	151	145	139	111	92	79	69	55	46	40	10 S 2
10 S 3		4000	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	10 S 3
10 S 4		4400	352	302	264	248	235	222	211	201	192	184	176	141	117	101	88	70	59	50	10 S 4
12 S 3		4400	352	302	264	248	235	222	211	201	192	184	176	141	117	101	88	70	59	50	12 S 3
12 S 4		4600	368	315	276	260	245	232	221	210	201	192	184	147	123	105	92	74	61	53	12 S 4
12 S 5		5000	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	12 S 5
13 S 6		5600	448	384	336	316	299	283	269	256	244	234	224	179	149	128	112	90	75	64	12 S 6
8 S 2	13'-0"	2692	207	177	155	146	138	131	124	118	113	108	104	83	69	59	52	41	34	30	8 S 2
10 S 2		3333	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	10 S 2
10 S 3		4000	308	264	231	217	205	195	185	176	168	161	154	123	103	88	77	62	51	44	10 S 3
10 S 4		4400	338	290	254	239	225	213	203	193	184	176	169	135	113	97	85	68	56	48	10 S 4
12 S 3		4400	338	290	254	239	225	213	203	193	184	176	169	135	113	97	85	68	56	48	12 S 3
12 S 4		4600	354	303	266	250	236	224	212	202	193	185	177	142	118	101	89	71	59	51	12 S 4
12 S 5		5000	385	330	289	272	257	243	231	220	210	201	193	154	128	110	96	77	64	55	12 S 5
12 S 6		5600	431	369	323	304	287	272	259	246	235	225	216	172	144	123	108	86	72	62	12 S 6
8 S 2	13'-6"	2593	192	165	144	136	128	121	115	110	105	100	96	77	64	55	48	38	32	—	8 S 2

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.	
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"		7'-0"
10 S 2	13'-6"	3210	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	38	10 S 2
10 S 3		4000	296	254	222	209	197	187	178	169	161	154	148	118	99	85	74	59	49	42	10 S 3
10 S 4		4400	326	279	245	230	217	206	196	186	178	170	163	130	109	93	82	65	54	47	10 S 4
12 S 3		4400	326	279	245	230	217	206	196	186	178	170	163	130	109	93	82	65	54	47	12 S 3
12 S 4		4600	341	292	256	241	227	215	205	195	186	178	171	136	114	97	85	68	57	49	12 S 4
12 S 5		5000	370	317	278	261	247	234	222	211	202	193	185	148	123	106	93	74	62	53	12 S 5
12 S 6		5600	415	356	311	293	277	262	249	237	226	217	208	166	138	119	104	83	69	59	12 S 6
8 S 2	14'-0"	2500	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	8 S 2
10 S 2		3095	221	189	166	156	147	140	133	126	121	115	111	88	74	63	55	44	37	32	10 S 2
10 S 3		3952	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	10 S 3
10 S 4		4400	314	269	236	222	209	198	188	179	171	164	157	126	105	90	79	63	52	45	10 S 4
12 S 3		4400	314	269	236	222	209	198	188	179	171	164	157	126	105	90	79	63	52	45	12 S 3
12 S 4		4600	329	282	247	232	219	208	197	188	179	172	165	132	110	94	82	66	55	47	12 S 4
12 S 5		5000	357	306	268	252	238	225	214	204	195	186	179	143	119	102	89	71	59	51	12 S 5
12 S 6		5600	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	12 S 6
14 S 4		5200	371	319	279	263	248	235	223	213	203	194	186	149	124	106	93	74	62	53	14 S 4
14 S 5		5800	414	355	311	292	276	261	248	237	226	216	207	166	138	118	104	83	69	59	14 S 5
14 S 6		6200	443	380	332	313	295	280	266	253	242	231	222	177	148	127	111	89	74	63	14 S 6
14 S 7		6800	486	417	365	343	324	307	292	278	265	254	243	194	162	139	122	97	81	69	14 S 7
8 S 2	14'-6"	2414	166	142	125	117	111	105	100	95	91	87	83	66	55	47	42	33	—	—	8 S 2
10 S 2		2989	206	177	155	145	137	130	124	118	112	107	103	82	69	59	52	41	34	—	10 S 2
10 S 3		3816	263	225	197	186	175	166	158	150	143	137	132	105	88	75	66	53	44	38	10 S 3
10 S 4		4400	303	260	227	214	220	191	182	173	165	158	152	121	101	87	76	61	50	43	10 S 4
12 S 3		4400	303	260	227	214	202	191	182	173	165	158	152	121	101	87	76	61	50	43	12 S 3
12 S 4		4600	317	272	238	224	211	200	190	181	173	165	159	127	106	91	79	63	53	45	12 S 4
12 S 5		5000	345	296	259	244	230	218	207	197	188	180	173	138	115	99	86	69	57	49	12 S 5
12 S 6		5600	386	331	290	272	257	244	232	221	211	201	193	154	129	110	97	77	64	55	12 S 6
14 S 4		5200	359	308	269	253	239	227	215	205	196	187	180	144	120	103	90	72	60	51	14 S 4
14 S 5		5800	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	14 S 5
14 S 6		6200	428	367	321	302	285	270	257	245	233	223	214	171	143	122	107	86	71	61	14 S 6
14 S 7		6800	469	402	352	331	313	296	281	268	256	245	235	188	156	134	117	94	78	67	14 S 7
8 S 2	15'-0"	2333	156	134	117	110	104	99	94	89	85	81	78	62	52	45	39	31	—	—	8 S 2
10 S 2		2889	193	165	145	136	129	122	116	110	105	101	97	77	64	55	48	39	32	—	10 S 2
10 S 3		3689	246	211	185	174	164	155	148	141	134	128	123	98	82	70	62	49	41	35	10 S 3
10 S 4		4400	293	251	220	207	195	185	176	167	160	153	147	117	98	84	73	59	49	42	10 S 4
12 S 3		4400	293	251	220	207	195	185	176	167	160	153	147	117	98	84	73	59	49	42	12 S 3
12 S 4		4600	307	263	230	217	205	194	184	175	167	160	154	123	102	88	77	61	51	44	12 S 4
12 S 5		5000	333	285	250	235	222	210	200	190	182	174	167	133	111	95	83	67	55	48	12 S 5
12 S 6		5600	373	320	280	263	249	236	224	213	203	195	187	149	124	107	93	75	62	53	12 S 6
14 S 4		5200	347	297	260	245	231	219	208	198	189	181	174	139	116	99	87	69	58	50	14 S 4
14 S 5		5800	387	332	290	273	258	244	232	221	211	202	194	155	129	111	97	77	64	55	14 S 5
14 S 6		6200	413	354	310	291	275	261	248	236	225	215	207	165	138	118	103	83	69	59	14 S 6
14 S 7		6800	453	388	340	320	302	286	272	259	247	236	227	181	151	129	113	91	75	65	14 S 7
8 S 2	15'-6"	2258	146	125	110	103	97	92	88	83	80	76	73	58	49	42	37	—	—	—	8 S 2
10 S 2		2796	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	10 S 2
10 S 3		3570	230	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	10 S 3
10 S 4		4400	284	243	213	200	189	179	170	162	155	148	142	114	95	81	71	57	47	41	10 S 4
12 S 3		4301	277	237	208	196	185	175	166	158	151	145	139	111	92	79	69	55	46	40	12 S 3
12 S 4		4600	297	255	223	210	198	188	178	170	162	155	149	119	99	85	74	59	49	42	12 S 4
12 S 5		5000	323	277	242	228	215	204	194	185	176	169	162	129	108	92	81	65	54	46	12 S 5
12 S 6		5600	361	309	271	255	241	228	217	206	197	188	181	144	120	103	90	72	60	52	12 S 6

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.	
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"		7'-0"
14 S 4	15'-6"	5200	335	287	251	236	223	212	201	191	183	175	168	134	112	96	84	67	56	48	14 S 4
14 S 5		5800	374	321	281	264	249	236	224	214	204	195	187	150	125	107	94	75	62	53	14 S 5
14 S 6		6200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	14 S 6
14 S 7		6800	439	376	329	310	293	277	263	251	239	229	220	176	146	125	110	88	73	63	14 S 7
8 S 2	16'-0"	2188	137	117	103	97	91	87	82	78	75	71	69	55	46	39	34	—	—	—	8 S 2
10 S 2		2708	169	145	127	119	113	107	101	97	92	88	85	68	56	48	42	34	—	—	10 S 2
10 S 3		3458	216	185	162	152	144	136	130	123	118	113	108	86	72	62	54	43	36	31	10 S 3
10 S 4		4292	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	10 S 4
12 S 3		4167	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37	12 S 3
12 S 4		4600	288	247	216	203	192	182	173	165	157	150	144	115	96	82	72	58	48	41	12 S 4
12 S 5		5000	313	268	235	221	209	198	188	179	171	163	157	125	104	89	78	63	52	45	12 S 5
12 S 6		5600	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	12 S 6
14 S 4		5200	325	279	244	229	217	205	195	186	177	170	163	130	108	93	81	65	54	46	14 S 4
14 S 5		5800	363	311	272	256	242	229	218	207	198	189	182	145	121	104	91	73	60	52	14 S 5
14 S 6		6200	388	333	291	274	259	245	233	222	212	202	194	155	129	111	97	78	65	55	14 S 6
14 S 7		6800	425	364	319	300	283	268	255	243	232	222	213	170	142	121	106	85	71	61	14 S 7
16 S 5		6000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	62	54	16 S 5
16 S 6		6600	413	354	310	291	275	261	248	236	225	215	207	165	138	118	103	83	69	59	16 S 6
16 S 7		7200	450	386	338	318	300	284	270	257	245	235	225	180	150	129	113	90	75	64	16 S 7
16 S 8		7800	488	418	366	344	325	308	293	279	266	255	244	195	163	139	122	98	81	70	16 S 8
10 S 2	16'-6"	2626	159	136	119	112	106	100	95	91	87	83	80	64	53	45	40	32	—	—	10 S 2
10 S 3		3354	203	174	152	143	135	128	122	116	111	106	102	81	68	58	51	41	34	—	10 S 3
10 S 4		4162	252	216	189	178	168	159	151	144	137	131	126	101	84	72	63	50	42	36	10 S 4
12 S 3		4040	245	210	184	173	163	155	147	140	134	128	123	98	82	70	61	49	41	35	12 S 3
12 S 4		4600	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	12 S 4
12 S 5		5000	303	260	227	214	202	191	182	173	165	158	152	121	101	87	76	61	50	43	12 S 5
12 S 6		5600	339	291	254	239	226	214	203	194	185	177	170	136	113	97	85	68	56	48	12 S 6
14 S 4		5200	315	270	236	222	210	199	189	180	172	164	158	126	105	90	79	63	52	45	14 S 4
14 S 5		5800	352	302	264	248	235	222	211	201	192	184	176	141	117	101	88	70	59	50	14 S 5
14 S 6		6200	376	322	282	265	251	237	226	215	205	196	188	150	125	107	94	75	63	54	14 S 6
14 S 7		6800	412	353	309	291	275	260	247	235	225	215	206	165	137	118	103	82	69	59	14 S 7
16 S 5		6000	364	312	273	257	243	230	218	208	199	190	182	146	121	104	91	73	61	52	16 S 5
16 S 6		6600	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	16 S 6
16 S 7		7200	436	374	327	308	291	275	262	249	238	227	218	174	145	125	109	87	73	62	16 S 7
16 S 8		7800	473	405	355	334	315	299	284	270	258	247	237	189	158	135	118	95	79	68	16 S 8
10 S 2	17'-0"	2549	150	129	113	106	100	95	90	86	82	78	75	60	50	43	38	30	—	—	10 S 2
10 S 3		3255	191	164	143	135	127	121	115	109	104	100	96	76	64	55	48	38	32	—	10 S 3
10 S 4		4039	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	34	10 S 4
12 S 3		3922	231	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	12 S 3
12 S 4		4600	271	232	203	191	181	171	163	155	148	141	136	108	90	77	68	54	45	39	12 S 4
12 S 5		5000	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	12 S 5
12 S 6		5600	329	282	247	232	219	208	197	188	179	172	165	132	110	94	82	66	55	47	12 S 6
14 S 4		5200	306	262	230	216	204	193	184	175	167	160	153	122	102	87	77	61	51	44	14 S 4
14 S 5		5800	341	292	256	241	227	215	205	195	186	178	171	136	114	97	85	68	57	49	14 S 5
14 S 6		6200	365	313	274	258	243	230	219	209	199	190	183	146	122	104	91	73	61	52	14 S 6
14 S 7		6800	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	14 S 7
16 S 5		6000	353	303	265	249	235	223	212	202	193	184	177	141	118	101	88	71	59	50	16 S 5
16 S 6		6600	388	333	291	274	259	245	233	222	212	202	194	155	129	111	97	78	65	55	16 S 6
16 S 7		7200	424	363	318	299	283	268	254	242	231	221	212	170	141	121	106	85	71	61	16 S 7
16 S 8		7800	459	393	344	324	306	290	275	262	250	239	230	184	153	131	115	92	76	66	16 S 8
10 S 2	17'-6"	2476	141	121	106	100	94	89	85	81	77	74	71	56	47	40	35	—	—	—	10 S 2
10 S 3		3162	181	155	136	128	121	114	109	103	99	94	91	72	60	52	45	36	30	—	10 S 3
10 S 4		3924	224	192	168	158	149	141	134	128	122	117	112	90	75	64	56	45	38	32	10 S 4

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
12 S 3	17'-6"	3810	218	187	164	154	145	138	131	125	119	114	109	87	73	62	55	44	36	31	12 S 3
12 S 4		4600	263	225	197	186	175	166	158	150	143	137	132	105	88	75	66	53	44	38	12 S 4
12 S 5		5000	286	245	215	202	191	181	172	163	156	149	143	114	95	82	72	57	48	41	12 S 5
12 S 6		5600	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	12 S 6
14 S 4		5200	297	255	223	210	198	188	178	170	162	155	149	119	99	85	74	59	49	42	14 S 4
14 S 5		5800	331	284	248	234	221	209	199	189	181	173	166	132	110	95	83	66	55	47	14 S 5
14 S 6		6200	354	303	266	250	236	224	212	202	193	185	177	142	118	101	89	71	59	51	14 S 6
14 S 7		6800	389	333	292	275	259	246	233	222	212	203	195	156	130	111	97	78	65	56	14 S 7
16 S 5		6000	343	294	257	242	229	217	206	196	187	179	172	137	114	98	86	69	57	49	16 S 5
16 S 6		6600	377	323	283	266	251	238	226	215	206	197	189	151	126	108	94	75	63	54	16 S 6
16 S 7		7200	411	352	308	290	274	260	247	235	224	214	206	164	137	117	103	82	68	59	16 S 7
16 S 8		7800	446	382	335	315	297	282	268	255	243	233	223	178	149	127	112	89	74	64	16 S 8
10 S 2	18'-0"	2407	134	115	101	95	89	85	80	77	73	70	67	54	45	38	34	—	—	—	10 S 2
10 S 3		3074	171	147	128	121	114	108	103	98	93	89	86	68	57	49	43	34	—	—	10 S 3
10 S 4		3815	212	182	159	150	141	134	127	121	116	111	106	85	71	61	53	42	35	30	10 S 4
12 S 3		3704	206	177	155	145	137	130	124	118	112	107	103	82	69	59	52	41	34	—	12 S 3
12 S 4		4600	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	12 S 4
12 S 5		5000	278	238	209	196	185	176	167	159	152	145	139	111	93	79	70	56	46	40	12 S 5
12 S 6		5600	311	267	233	220	207	196	187	178	170	162	156	124	104	89	78	62	52	44	12 S 6
14 S 4		5200	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	14 S 4
14 S 5		5800	322	276	242	227	215	203	193	184	176	168	161	129	107	92	81	64	54	46	14 S 5
14 S 6		6200	344	295	258	243	229	217	206	197	188	179	172	138	115	98	86	69	57	49	14 S 6
14 S 7		6800	378	324	284	267	252	239	227	216	206	197	189	151	126	108	95	76	63	54	14 S 7
16 S 5		6000	333	286	251	236	223	211	200	191	182	174	167	134	111	95	84	67	56	48	16 S 5
16 S 6		6600	367	315	275	259	245	232	220	210	200	191	184	147	122	105	92	73	61	52	16 S 6
16 S 7		7200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	16 S 7
16 S 8		7800	433	371	325	306	289	273	260	247	236	226	217	173	144	124	108	87	72	62	16 S 8
18 S 6		7200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	18 S 6
18 S 7		7600	422	362	317	298	281	266	253	241	230	220	211	169	141	121	106	84	70	60	18 S 7
18 S 8		8200	456	391	342	322	304	288	274	261	249	238	228	182	152	130	114	91	76	65	18 S 8
10 S 2	18'-6"	2342	127	109	95	90	85	80	76	73	69	66	64	51	42	36	32	—	—	—	10 S 2
10 S 3		2991	162	139	122	114	108	102	97	93	88	85	81	65	54	46	41	32	—	—	10 S 3
10 S 4		3712	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	10 S 4
12 S 3		3604	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	12 S 3
12 S 4		4505	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	12 S 4
12 S 5		5000	270	231	203	191	180	171	162	154	147	141	135	108	90	77	68	54	45	39	12 S 5
12 S 6		5600	303	260	227	214	202	191	182	173	165	158	152	121	101	87	76	61	50	43	12 S 6
14 S 4		5200	281	241	211	198	187	177	169	161	153	147	141	112	94	80	70	56	47	40	14 S 4
14 S 5		5800	314	269	236	222	209	198	188	179	171	164	157	126	105	90	79	63	52	45	14 S 5
14 S 6		6200	335	287	251	236	223	212	201	191	183	175	168	134	112	96	84	67	56	48	14 S 6
14 S 7		6800	368	315	276	260	245	232	221	210	201	192	184	147	123	105	92	74	61	53	14 S 7
16 S 5		6000	324	278	243	229	216	205	194	185	177	169	162	130	108	93	81	65	54	46	16 S 5
16 S 6		6600	357	306	268	252	238	225	214	204	195	186	179	143	119	102	89	71	59	51	16 S 6
16 S 7		7200	389	333	292	275	259	246	233	222	212	203	195	156	130	111	97	78	65	56	16 S 7
16 S 8		7800	422	362	317	298	281	266	253	241	230	220	211	169	141	121	106	84	70	60	16 S 8
18 S 6		7200	389	333	292	275	259	246	233	222	212	203	195	156	130	111	97	78	65	56	18 S 6
18 S 7		7600	411	352	308	290	274	260	247	235	224	214	206	164	137	117	103	82	68	59	18 S 7
18 S 8		8200	443	380	332	313	295	280	266	253	242	231	222	177	148	127	111	89	74	63	18 S 8
10 S 2	19'-0"	2281	120	103	90	85	80	76	72	69	65	63	60	48	40	34	30	—	—	—	10 S 2
10 S 3		2912	153	131	115	108	102	97	92	87	83	80	77	61	51	44	38	31	—	—	10 S 3
10 S 4		3614	190	163	143	134	127	120	114	109	104	99	95	76	63	54	48	38	32	—	10 S 4
12 S 3		3509	185	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	12 S 3
12 S 4		4386	231	198	173	163	154	146	139	132	126	121	116	92	77	66	58	46	38	33	12 S 4

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
12 S 5	19'-0"	5000	263	225	197	186	175	166	158	150	143	137	132	105	88	75	66	53	44	38	12 S 5
12 S 6		5600	295	253	221	208	197	186	177	169	161	154	148	118	98	84	74	59	49	42	12 S 6
14 S 4		5158	271	233	204	192	181	172	163	155	148	142	136	109	91	78	68	54	45	39	14 S 4
14 S 5		5800	305	261	229	215	203	193	183	174	166	159	153	122	102	87	76	61	51	44	14 S 5
14 S 6		6200	326	279	245	230	217	206	196	186	178	170	163	130	109	93	82	65	54	47	14 S 6
14 S 7		6800	358	307	269	253	239	226	215	205	195	187	179	143	119	102	90	72	60	51	14 S 7
16 S 5		6000	316	271	237	223	211	200	190	181	172	165	158	126	105	90	79	63	53	45	16 S 5
16 S 6		6600	347	297	260	245	231	219	208	198	189	181	174	139	116	99	87	69	58	50	16 S 6
16 S 7		7200	379	325	284	267	253	239	227	217	207	198	190	152	126	108	95	76	63	54	16 S 7
16 S 8		7800	411	352	308	290	274	260	247	235	224	214	206	164	137	117	103	82	68	59	16 S 8
18 S 6		7200	379	325	284	267	253	239	227	217	207	198	190	152	126	108	95	76	63	54	18 S 6
18 S 7		7600	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	18 S 7
18 S 8		8200	432	370	324	305	288	273	259	247	236	225	216	173	144	123	108	86	72	62	18 S 8
10 S 2	19'-6"	2222	114	98	86	80	76	72	68	65	62	59	57	46	38	33	—	—	—	—	10 S 2
10 S 3		2838	146	125	110	103	97	92	88	83	80	76	73	58	49	42	37	—	—	—	10 S 3
10 S 4		3521	181	155	136	128	121	114	109	103	99	94	91	72	60	52	45	36	30	—	10 S 4
12 S 3		3419	175	150	131	124	117	111	105	100	95	91	88	70	58	50	44	35	—	—	12 S 3
12 S 4		4274	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	12 S 4
12 S 5		5000	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	12 S 5
12 S 6		5600	287	246	215	203	191	181	172	164	157	150	144	115	96	82	72	57	48	41	12 S 6
14 S 4		5026	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	14 S 4
14 S 5		5800	297	255	223	210	198	188	178	170	162	155	149	119	99	85	74	59	49	42	14 S 5
14 S 6		6200	318	273	239	224	212	201	191	182	173	166	159	127	106	91	80	64	53	45	14 S 6
14 S 7		6800	349	299	262	246	233	220	209	199	190	182	175	140	116	100	87	70	58	50	14 S 7
16 S 5		6000	308	264	231	217	205	195	185	176	168	161	154	123	103	88	77	62	51	44	16 S 5
16 S 6		6600	338	290	254	239	225	213	203	193	184	176	169	135	113	97	85	68	56	48	16 S 6
16 S 7		7200	369	316	277	260	246	233	221	211	201	193	185	148	123	105	92	74	61	53	16 S 7
16 S 8		7800	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	16 S 8
18 S 6		7200	369	316	277	260	246	233	221	211	201	193	185	148	123	105	92	74	61	53	18 S 6
18 S 7		7600	390	334	293	275	260	246	234	223	213	203	195	156	130	111	98	78	65	56	18 S 7
18 S 8		8200	421	361	316	297	281	266	253	241	230	220	211	168	140	120	105	84	70	60	18 S 8
10 S 2	20'-0"	2167	108	93	81	76	72	68	65	62	59	56	54	43	36	31	—	—	—	—	10 S 2
10 S 3		2767	138	118	104	97	92	87	83	79	75	72	69	55	46	39	35	—	—	—	10 S 3
10 S 4		3433	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	10 S 4
12 S 3		3333	167	143	125	118	111	105	100	95	91	87	84	67	56	48	42	33	—	—	12 S 3
12 S 4		4167	208	178	156	147	139	131	125	119	113	109	104	83	69	59	52	42	35	30	12 S 4
12 S 5		4967	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	12 S 5
12 S 6		5600	280	240	210	198	187	177	168	160	153	146	140	112	93	80	70	56	47	40	12 S 6
14 S 4		4900	245	210	184	173	163	155	147	140	134	128	123	98	82	70	61	49	41	35	14 S 4
14 S 5		5800	290	249	218	205	193	183	174	166	158	151	145	116	97	83	73	58	48	41	14 S 5
14 S 6		6200	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	14 S 6
14 S 7		6800	340	291	255	240	227	215	204	194	185	177	170	136	113	97	85	68	57	49	14 S 7
16 S 5		6000	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	16 S 5
16 S 6		6600	330	283	248	233	220	208	198	189	180	172	165	132	110	94	83	66	55	47	16 S 6
16 S 7		7200	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	16 S 7
16 S 8		7800	390	334	293	275	260	246	234	223	213	203	195	156	130	111	98	78	65	56	16 S 8
18 S 6		7200	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	18 S 6
18 S 7		7600	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54	18 S 7
18 S 8		8200	410	351	308	289	273	259	246	234	224	214	205	164	137	117	103	82	68	59	18 S 8
20 S 6		7400	370	317	278	261	247	234	222	211	202	193	185	148	123	106	93	74	62	53	20 S 6
20 S 7		7800	390	334	293	275	260	246	234	223	213	203	195	156	130	111	98	78	65	56	20 S 7
20 S 8		8400	420	360	315	296	280	265	252	240	229	219	210	168	140	120	105	84	70	60	20 S 8

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.	
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"		7'-0"
12 S 3	20'-6"	3252	159	136	119	112	106	100	95	91	87	83	80	64	53	45	40	32	—	—	12 S 3
12 S 4		4065	198	170	149	140	132	125	119	113	108	103	99	79	66	57	50	40	33	—	12 S 4
12 S 5		4846	236	202	177	167	157	149	142	135	129	123	118	94	79	67	59	47	39	34	12 S 5
12 S 6		5600	273	234	205	193	182	172	164	156	149	142	137	109	91	78	68	55	45	39	12 S 6
14 S 4		4780	233	200	175	164	155	147	140	133	127	122	117	93	78	67	58	47	39	33	14 S 4
14 S 5		5691	278	238	209	196	185	176	167	159	152	145	139	111	93	79	70	56	46	40	14 S 5
14 S 6		6200	302	259	227	213	201	191	181	173	165	158	151	121	101	86	76	60	50	43	14 S 6
14 S 7		6800	332	285	249	234	221	210	199	190	181	173	166	133	111	95	83	66	55	47	14 S 7
16 S 5		6000	293	251	220	207	195	185	176	167	160	153	147	117	98	84	73	59	49	42	16 S 5
16 S 6		6600	322	276	241	227	215	203	193	184	176	168	161	129	107	92	81	64	54	46	16 S 6
16 S 7		7200	351	301	263	248	234	222	211	201	191	183	176	140	117	100	88	70	58	50	16 S 7
16 S 8		7800	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54	16 S 8
18 S 6		7200	351	301	263	248	234	222	211	201	191	183	176	140	117	100	88	70	58	50	18 S 6
18 S 7		7600	371	318	278	262	247	234	223	212	202	194	186	148	124	106	93	74	62	53	18 S 7
18 S 8		8200	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	18 S 8
20 S 6		7400	361	309	271	255	241	228	217	206	197	188	181	144	120	103	90	72	60	52	20 S 6
20 S 7		7800	380	326	285	268	253	240	228	217	207	198	190	152	127	109	95	76	63	54	20 S 7
20 S 8		8400	410	351	308	289	273	259	246	234	224	214	205	164	137	117	103	82	68	59	20 S 8
12 S 3	21'-0"	3175	151	129	113	107	101	95	91	86	82	79	76	60	50	43	38	30	—	—	12 S 3
12 S 4		3968	189	162	142	133	126	119	113	108	103	99	95	76	63	45	47	38	31	—	12 S 4
12 S 5		4730	225	193	169	159	150	142	135	129	123	117	113	90	75	64	56	45	37	32	12 S 5
12 S 6		5600	267	229	200	188	178	169	160	153	146	139	134	107	89	76	67	53	44	38	12 S 6
14 S 4		4667	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	14 S 4
14 S 5		5556	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	14 S 5
14 S 6		6200	295	253	221	208	197	186	177	169	161	154	148	118	98	84	74	59	49	42	14 S 6
14 S 7		6800	324	278	243	229	216	205	194	185	177	169	162	130	108	93	81	65	54	46	14 S 7
16 S 5		6000	286	245	215	202	191	181	172	163	156	149	143	114	95	82	72	57	48	41	16 S 5
16 S 6		6600	314	269	236	222	209	198	188	179	171	164	157	126	105	90	79	63	52	45	16 S 6
16 S 7		7200	343	294	257	242	229	217	206	196	187	179	172	137	114	98	86	69	57	49	16 S 7
16 S 8		7800	371	318	278	262	247	234	223	212	202	194	186	148	124	106	93	74	62	53	16 S 8
18 S 6		7200	343	294	257	242	229	217	206	196	187	179	172	137	114	98	86	69	57	49	18 S 6
18 S 7		7600	362	310	272	255	241	229	217	207	197	189	181	145	121	103	91	72	60	52	18 S 7
18 S 8		8200	390	334	293	275	260	246	234	223	213	203	195	156	130	111	98	78	65	56	18 S 8
20 S 6		7400	352	302	264	248	235	222	211	201	192	184	176	141	117	101	88	70	59	50	20 S 6
20 S 7		7800	371	318	278	262	247	234	223	212	202	194	186	148	124	106	93	74	62	53	20 S 7
20 S 8		8400	400	343	300	282	267	253	240	229	218	209	200	160	133	114	100	80	67	57	20 S 8
12 S 3	21'-6"	3101	144	123	108	102	96	91	86	82	79	75	72	58	48	41	36	—	—	—	12 S 3
12 S 4		3876	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	12 S 4
12 S 5		4620	215	184	161	151	143	136	129	123	117	112	108	86	72	61	54	43	36	31	12 S 5
12 S 6		5600	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37	12 S 6
14 S 4		4558	212	182	159	150	141	134	127	121	116	111	106	85	71	61	53	42	35	30	14 S 4
14 S 5		5426	252	216	189	178	168	159	151	144	137	131	126	101	84	72	63	50	42	36	14 S 5
14 S 6		6200	288	247	216	203	192	182	173	165	157	150	144	115	96	82	72	58	48	41	14 S 6
14 S 7		6800	316	271	237	223	211	200	190	181	172	165	158	126	105	90	79	63	53	45	14 S 7
16 S 5		6000	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	16 S 5
16 S 6		6600	307	263	230	217	205	194	184	175	167	160	154	123	102	88	77	61	51	44	16 S 6
16 S 7		7200	335	287	251	236	223	212	201	191	183	175	168	134	112	96	84	67	56	48	16 S 7
16 S 8		7800	363	311	272	256	242	229	218	207	198	189	182	145	121	104	91	73	60	52	16 S 8
18 S 6		7200	335	287	251	236	223	212	201	191	183	175	168	134	112	96	84	67	56	48	18 S 6
18 S 7		7600	353	303	265	249	235	223	212	202	193	184	177	141	118	101	88	71	59	50	18 S 7
18 S 8		8200	381	327	286	269	254	241	229	218	208	199	191	152	127	109	95	76	63	54	18 S 8
20 S 6		7400	344	295	258	243	229	217	206	197	188	179	172	138	115	98	86	69	57	49	20 S 6
20 S 7		7800	363	311	272	256	242	229	218	207	198	189	182	145	121	104	91	73	60	52	20 S 7
20 S 8		8400	391	335	293	276	261	247	235	223	213	204	196	156	130	112	98	78	65	56	20 S 8

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																			Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"		
12 S 3	22'-0"	3030	138	117	103	97	91	87	82	78	75	71	69	55	46	39	34	—	—	—	12 S 3	
12 S 4		3788	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	12 S 4	
12 S 5		4515	205	176	154	145	137	129	123	117	112	107	103	82	68	59	51	41	34	—	12 S 5	
12 S 6		5515	251	215	188	177	167	159	151	143	137	131	126	100	84	72	63	50	42	36	12 S 6	
14 S 4		4455	202	174	152	143	135	128	122	116	111	106	102	81	68	58	51	41	34	—	14 S 4	
14 S 5		5303	241	207	181	170	161	152	145	138	131	126	121	96	80	69	60	48	40	34	14 S 5	
14 S 6		6200	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	14 S 6	
14 S 7		6800	309	265	232	218	206	195	185	177	169	161	155	124	103	88	77	62	51	44	14 S 7	
16 S 5		6000	273	234	205	193	182	172	164	156	149	142	137	109	91	78	68	55	45	39	16 S 5	
16 S 6		6600	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	16 S 6	
16 S 7		7200	327	280	245	231	218	207	196	187	178	171	164	131	109	93	82	65	54	47	16 S 7	
16 S 8		7800	355	304	266	251	237	224	213	203	194	185	178	142	118	101	89	71	59	51	16 S 8	
18 S 6		7200	327	280	245	231	218	207	196	187	178	171	164	131	109	93	82	65	54	47	18 S 6	
18 S 7		7600	345	296	259	244	230	218	207	197	188	180	173	138	115	99	86	69	57	49	18 S 7	
18 S 8		8200	373	320	280	263	249	236	224	213	203	195	187	149	124	107	93	75	62	53	18 S 8	
20 S 6		7400	336	288	252	237	224	212	202	192	183	175	168	134	112	96	84	67	56	48	20 S 6	
20 S 7		7800	355	304	266	251	237	224	213	203	194	185	178	142	118	101	89	71	59	51	20 S 7	
20 S 8		8400	382	327	287	270	255	241	229	218	208	199	191	153	127	109	96	76	64	55	20 S 8	
22 S 7		8000	364	312	273	257	243	230	218	208	199	190	182	146	121	104	91	73	61	52	22 S 7	
22 S 8		8600	391	335	293	276	261	247	235	223	213	204	196	156	130	112	98	78	65	56	22 S 8	
12 S 3	22'-6"	2963	132	113	99	93	88	83	79	75	72	69	66	53	44	38	33	—	—	—	12 S 3	
12 S 4		3704	165	141	124	116	110	104	99	94	90	86	83	66	55	47	41	33	—	—	12 S 4	
12 S 5		4415	196	168	147	138	131	124	118	112	107	102	98	78	65	56	49	39	33	—	12 S 5	
12 S 6		5393	240	206	180	169	160	152	144	137	131	125	120	96	80	69	60	48	40	34	12 S 6	
14 S 4		4356	194	166	146	137	129	123	116	111	106	101	97	78	65	55	49	39	32	—	14 S 4	
14 S 5		5185	230	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	14 S 5	
14 S 6		6200	276	237	207	195	184	174	166	158	151	144	138	110	92	79	69	55	46	39	14 S 6	
14 S 7		6800	302	259	227	213	201	191	181	173	165	158	151	121	101	86	76	60	50	43	14 S 7	
16 S 5		5985	266	228	200	188	177	168	160	152	145	139	133	106	89	76	67	53	44	38	16 S 5	
16 S 6		6600	293	251	220	207	195	185	176	167	160	153	147	117	98	84	73	59	49	42	16 S 6	
16 S 7		7200	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	16 S 7	
16 S 8		7800	347	297	260	245	231	219	208	198	189	181	174	139	116	99	87	69	58	50	16 S 8	
18 S 6		7200	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	18 S 6	
18 S 7		7600	338	290	254	239	225	213	203	193	184	176	169	135	113	97	85	68	56	48	18 S 7	
18 S 8		8200	364	312	273	257	243	230	218	208	199	190	182	146	121	104	91	73	61	52	18 S 8	
20 S 6		7400	329	282	247	232	219	208	197	188	179	172	165	132	110	94	82	66	55	47	20 S 6	
20 S 7		7800	347	297	260	245	231	219	208	198	189	181	174	139	116	99	87	69	58	50	20 S 7	
20 S 8		8400	373	320	280	263	249	236	224	213	203	195	187	149	124	107	93	75	62	53	20 S 8	
22 S 7		8000	356	305	267	251	237	225	214	203	194	186	178	142	119	102	89	71	59	51	22 S 7	
22 S 8		8600	382	327	287	270	255	241	229	218	208	199	191	153	127	109	96	76	64	55	22 S 8	
12 S 3	23'-0"	2899	126	108	95	89	84	80	76	72	69	66	63	50	42	36	32	—	—	—	12 S 3	
12 S 4		3623	158	135	119	112	105	100	95	90	86	82	79	63	53	45	40	32	—	—	12 S 4	
12 S 5		4319	188	161	141	133	125	119	113	107	103	98	94	75	63	54	47	38	31	—	12 S 5	
12 S 6		5275	229	196	172	162	153	145	137	131	125	119	115	92	76	65	57	46	38	33	12 S 6	
14 S 4		4261	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	14 S 4	
14 S 5		5072	221	189	166	156	147	140	133	126	121	115	111	88	74	63	55	44	37	32	14 S 5	
14 S 6		6200	270	231	203	191	180	171	162	154	147	141	135	108	90	77	68	54	45	39	14 S 6	
14 S 7		6800	296	254	222	209	197	187	178	169	161	154	148	118	99	85	74	59	49	42	14 S 7	
16 S 5		5855	255	219	191	180	170	161	153	146	139	133	128	102	85	73	64	51	42	36	16 S 5	
16 S 6		6600	287	246	215	203	191	181	172	164	157	150	144	115	96	82	72	57	48	41	16 S 6	
16 S 7		7200	313	268	235	221	209	198	188	179	171	163	157	125	104	89	78	63	52	45	16 S 7	
16 S 8		7800	339	291	254	239	226	214	203	194	185	177	170	136	113	97	85	68	56	48	16 S 8	

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																Joist Type No.		
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"		6'-0"	7'-0"
18 S 6	23'-0"	7200	313	268	235	221	209	198	188	179	171	163	157	125	104	89	78	63	52	45	18 S 6
18 S 7		7600	330	283	248	233	220	208	198	189	180	172	165	132	110	94	83	66	55	47	18 S 7
18 S 8		8200	357	306	268	252	238	225	214	204	195	186	179	143	119	102	89	71	59	51	18 S 8
20 S 6		7400	322	276	242	227	215	203	193	184	176	168	161	129	107	92	81	64	54	46	20 S 6
20 S 7		7800	339	291	254	239	226	214	203	194	185	177	170	136	113	97	85	68	56	48	20 S 7
20 S 8		8400	365	313	274	258	243	231	219	209	199	190	183	146	122	104	91	73	61	52	20 S 8
22 S 7		8000	348	298	261	246	232	220	209	199	190	182	174	139	116	99	87	70	58	50	22 S 7
22 S 8		8600	374	321	281	264	249	236	224	214	204	195	187	150	125	107	94	75	62	53	22 S 8
12 S 3	23'-6"	2837	121	104	91	85	81	76	73	69	66	63	61	48	40	35	30	—	—	—	12 S 3
12 S 4		3546	151	129	113	107	101	95	91	86	82	79	76	60	50	43	38	30	—	—	12 S 4
12 S 5		4227	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	12 S 5
12 S 6		5163	220	189	165	155	147	139	132	126	120	115	110	88	73	63	55	44	37	31	12 S 6
14 S 4		4170	177	152	133	125	118	112	106	101	97	92	89	71	59	51	44	35	—	—	14 S 4
14 S 5		4965	211	181	158	149	141	133	127	121	115	110	106	84	70	60	53	42	35	30	14 S 5
14 S 6		6071	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	14 S 6
14 S 7		6800	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	14 S 7
16 S 5		5730	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	16 S 5
16 S 6		6600	281	241	211	198	187	177	169	161	153	147	141	112	94	80	70	56	47	40	16 S 6
16 S 7		7200	306	262	230	216	204	193	184	175	167	160	153	122	102	87	77	61	51	44	16 S 7
16 S 8		7800	332	285	249	234	221	210	199	190	181	173	166	133	111	95	83	66	55	47	16 S 8
18 S 6		7200	306	262	230	216	204	193	184	175	167	160	153	122	102	87	77	61	51	44	18 S 6
18 S 7		7600	323	277	242	228	215	204	194	185	176	169	162	129	108	92	81	65	54	46	18 S 7
18 S 8		8200	349	299	262	246	233	220	209	199	190	182	175	140	116	100	87	70	58	50	18 S 8
20 S 6		7400	315	270	236	222	210	199	189	180	172	164	158	126	105	90	79	63	52	45	20 S 6
20 S 7		7800	332	285	249	234	221	210	199	190	181	173	166	133	111	95	83	66	55	47	20 S 7
20 S 8		8400	357	306	268	252	238	225	214	204	195	186	179	143	119	102	89	71	59	51	20 S 8
22 S 7		8000	340	291	255	240	227	215	204	194	185	177	170	136	113	97	85	68	57	49	22 S 7
22 S 8		8600	366	314	275	258	244	231	220	209	200	191	183	146	122	105	92	73	61	52	22 S 8
12 S 3	24'-0"	2778	116	99	87	82	77	73	70	66	63	61	58	46	39	33	—	—	—	—	12 S 3
12 S 4		3472	145	124	109	102	97	92	87	83	79	76	73	58	48	41	36	—	—	—	12 S 4
12 S 5		4139	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	12 S 5
12 S 6		5056	211	181	158	149	141	133	127	121	115	110	106	84	70	60	53	42	35	30	12 S 6
14 S 4		4083	170	146	128	120	113	107	102	97	93	89	85	68	57	49	43	34	—	—	14 S 4
14 S 5		4861	203	174	152	143	135	128	122	116	111	106	102	81	68	58	51	41	34	—	14 S 5
14 S 6		5944	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	14 S 6
14 S 7		6800	283	243	212	200	189	179	170	162	154	148	142	113	94	81	71	57	47	40	14 S 7
16 S 5		5611	234	201	176	165	156	148	140	134	128	122	117	94	78	67	59	47	39	33	16 S 5
16 S 6		6600	275	236	206	194	183	174	165	157	150	143	138	110	92	79	69	55	46	39	16 S 6
16 S 7		7200	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	16 S 7
16 S 8		7800	325	279	244	229	217	205	195	186	177	170	163	130	108	93	81	65	54	46	16 S 8
18 S 6		7200	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	18 S 6
18 S 7		7600	317	272	238	224	211	200	190	181	173	165	159	127	106	91	79	63	53	45	18 S 7
18 S 8		8200	342	293	257	241	228	216	205	195	187	178	171	137	114	98	86	68	57	49	18 S 8
20 S 6		7400	308	264	231	217	205	195	185	176	168	161	154	123	103	88	77	62	51	44	20 S 6
20 S 7		7800	325	279	244	229	217	205	195	186	177	170	163	130	108	93	81	65	54	46	20 S 7
20 S 8		8400	350	300	263	247	233	221	210	200	191	183	175	140	117	100	88	70	58	50	20 S 8
22 S 7		8000	333	285	250	235	222	210	200	190	182	174	167	133	111	95	83	67	55	48	22 S 7
22 S 8		8600	358	307	269	253	239	226	215	205	195	187	179	143	119	102	90	72	60	51	22 S 8
24 S 8		9000	375	321	281	265	250	237	225	214	205	196	188	150	125	107	94	75	62	54	24 S 8
14 S 4	24'-6"	4000	163	140	122	115	109	103	98	93	89	85	82	65	54	47	41	33	—	—	14 S 4
14 S 5		4762	194	166	146	137	129	123	116	111	106	101	97	78	65	55	49	39	32	—	14 S 5

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																Joist Type No.		
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"		6'-0"	7'-0"
14 S 6	24'-6"	5823	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	34	14 S 6
14 S 7		6800	278	238	209	196	185	176	167	159	152	145	139	111	93	79	70	56	46	40	14 S 7
16 S 5		5497	224	192	168	158	149	141	134	128	122	117	112	90	75	64	56	45	37	32	16 S 5
16 S 6		6600	269	231	202	190	179	170	161	154	147	140	135	108	90	77	67	54	45	38	16 S 6
16 S 7		7200	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	16 S 7
16 S 8		7800	318	273	239	224	212	201	191	182	173	166	159	127	106	91	80	64	53	45	16 S 8
18 S 6		7200	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	18 S 6
18 S 7		7600	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	18 S 7
18 S 8		8200	335	287	251	236	223	212	201	191	183	175	168	134	112	96	84	67	56	48	18 S 8
20 S 6		7400	302	259	227	213	201	191	181	173	165	158	151	121	101	86	76	60	50	43	20 S 6
20 S 7		7800	318	273	239	224	212	201	191	182	173	166	159	127	106	91	80	64	53	45	20 S 7
20 S 8		8400	343	294	257	242	229	217	206	196	187	179	172	137	114	98	86	69	57	49	20 S 8
22 S 7		8000	327	280	245	231	218	207	196	187	178	171	164	131	109	93	82	65	54	47	22 S 7
22 S 8		8600	351	301	263	248	234	222	211	201	191	183	176	140	117	100	88	70	58	50	22 S 8
24 S 8		9000	367	315	275	259	245	232	220	210	200	191	184	147	122	105	92	73	61	52	24 S 8
14 S 4	25'-0"	3920	157	135	118	111	105	99	94	90	86	82	79	63	52	45	39	31	—	—	14 S 4
14 S 5		4667	187	160	140	132	125	118	112	107	102	98	94	75	62	53	47	37	31	—	14 S 5
14 S 6		5707	228	195	171	161	152	144	137	130	124	119	114	91	76	65	57	46	38	33	14 S 6
14 S 7		6693	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	14 S 7
16 S 5		5387	215	184	161	152	143	136	129	123	117	112	108	86	72	61	54	43	36	31	16 S 5
16 S 6		6453	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	16 S 6
16 S 7		7200	288	247	216	203	192	182	173	165	157	150	144	115	96	82	72	58	48	41	16 S 7
16 S 8		7800	312	267	234	220	208	197	187	178	170	163	156	125	104	89	78	62	52	45	16 S 8
18 S 6		7200	288	247	216	203	192	182	173	165	157	150	144	115	96	82	72	58	48	41	18 S 6
18 S 7		7600	304	261	228	215	203	192	182	174	166	159	152	122	101	87	76	61	51	43	18 S 7
18 S 8		8200	328	281	246	232	219	207	197	187	179	171	164	131	109	94	82	66	55	47	18 S 8
20 S 6		7400	296	254	222	209	197	187	178	169	161	154	148	118	99	85	74	59	49	42	20 S 6
20 S 7		7800	312	267	234	220	208	197	187	178	170	163	156	125	104	89	78	62	52	45	20 S 7
20 S 8		8400	336	288	252	237	224	212	202	192	183	175	168	134	112	96	84	67	56	48	20 S 8
22 S 7		8000	320	274	240	226	213	202	192	183	175	167	160	128	107	91	80	64	53	46	22 S 7
22 S 8		8600	344	295	258	243	229	217	206	197	188	179	172	138	115	98	86	69	57	49	22 S 8
24 S 8		9000	360	309	270	254	240	227	216	206	196	188	180	144	120	103	90	72	60	51	24 S 8
14 S 4	25'-6"	3843	151	129	113	107	101	95	91	86	82	79	76	60	50	43	38	30	—	—	14 S 4
14 S 5		4575	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	14 S 5
14 S 6		5595	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	14 S 6
14 S 7		6562	257	220	193	181	171	162	154	147	140	134	129	103	86	73	64	51	43	37	14 S 7
16 S 5		5281	207	177	155	146	138	131	124	118	113	108	104	83	69	59	52	41	34	30	16 S 5
16 S 6		6327	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	16 S 6
16 S 7		7200	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	16 S 7
16 S 8		7800	306	262	230	216	204	193	184	175	167	160	153	122	102	87	77	61	51	44	16 S 8
18 S 6		7111	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	18 S 6
18 S 7		7600	298	255	224	210	199	188	179	170	163	155	149	119	99	85	75	60	50	43	18 S 7
18 S 8		8200	322	276	242	227	215	203	193	184	176	168	161	129	107	92	81	64	54	46	18 S 8
20 S 6		7400	290	249	218	205	193	183	174	166	158	151	145	116	97	83	73	58	48	41	20 S 6
20 S 7		7800	306	262	230	216	204	193	184	175	167	160	153	122	102	87	77	61	51	44	20 S 7
20 S 8		8400	329	282	247	232	219	208	197	188	179	172	165	132	110	94	82	66	55	47	20 S 8
22 S 7		8000	314	269	236	222	209	198	188	179	171	164	157	126	105	90	79	63	52	45	22 S 7
22 S 8		8600	337	289	253	238	225	213	202	193	184	176	169	135	112	96	84	67	56	48	22 S 8
24 S 8		9000	353	303	265	249	235	223	212	202	193	184	177	141	118	101	88	71	59	50	24 S 8
14 S 4	26'-0"	3769	145	124	109	102	97	92	87	83	79	76	73	58	48	41	36	—	—	—	14 S 4
14 S 5		4487	173	148	130	122	115	109	104	99	94	90	87	69	58	49	43	35	—	—	14 S 5

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																Joist Type No.		
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"		6'-0"	7'-0"
14 S 6	26'-0"	5487	211	181	158	149	141	133	127	121	115	110	106	84	70	60	53	42	35	30	14 S 6
14 S 7		6436	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	14 S 7
16 S 5		5179	199	171	149	140	133	126	119	114	109	104	100	80	66	57	50	40	33	—	16 S 5
16 S 6		6205	239	205	179	169	159	151	143	137	130	125	120	96	80	68	60	48	40	34	16 S 6
16 S 7		7200	277	237	208	196	185	175	166	158	151	145	139	111	92	79	69	55	46	40	16 S 7
16 S 8		7800	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	16 S 8
18 S 6		6974	268	230	201	189	179	169	161	153	146	140	134	107	89	77	67	54	45	38	18 S 6
18 S 7		7600	292	250	219	206	195	184	175	167	159	152	146	117	97	83	73	58	49	42	18 S 7
18 S 8		8200	315	270	236	222	210	199	189	180	172	164	158	126	105	90	79	63	52	45	18 S 8
20 S 6		7400	285	244	214	201	190	180	171	163	155	149	143	114	95	81	71	57	47	41	20 S 6
20 S 7		7800	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	20 S 7
20 S 8		8400	323	277	242	228	215	204	194	185	176	169	162	129	108	92	81	65	54	46	20 S 8
22 S 7		8000	308	264	231	217	205	195	185	176	168	161	154	123	103	88	77	62	51	44	22 S 7
22 S 8		8600	331	284	248	234	221	209	199	189	181	173	166	132	110	95	83	66	55	47	22 S 8
24 S 8		9000	346	297	260	244	231	219	208	198	189	181	173	138	115	99	87	69	58	49	24 S 8
14 S 4	26'-6"	3698	140	120	105	99	93	88	84	80	76	73	70	56	47	40	35	—	—	—	14 S 4
14 S 5		4403	166	142	125	117	111	105	100	95	91	87	83	66	55	47	42	33	—	—	14 S 5
14 S 6		5384	203	174	152	143	135	128	122	116	111	106	102	81	68	58	51	41	34	—	14 S 6
14 S 7		6314	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	34	14 S 7
16 S 5		5082	192	165	144	136	128	121	115	110	105	100	96	77	64	55	48	38	32	—	16 S 5
16 S 6		6088	230	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	16 S 6
16 S 7		7200	272	233	204	192	181	172	163	155	148	142	136	109	91	78	68	54	45	39	16 S 7
16 S 8		7800	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	16 S 8
18 S 6		6843	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	18 S 6
18 S 7		7600	287	246	215	203	191	181	172	164	157	150	144	115	96	82	72	57	48	41	18 S 7
18 S 8		8200	309	265	232	218	206	195	185	177	169	161	155	124	103	88	77	62	51	44	18 S 8
20 S 6		7400	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	20 S 6
20 S 7		7800	294	252	221	208	196	186	176	168	160	153	147	118	98	84	74	59	49	42	20 S 7
20 S 8		8400	317	272	238	224	211	200	190	181	173	165	159	127	106	91	79	63	53	45	20 S 8
22 S 7		8000	302	259	227	213	201	191	181	173	165	158	151	121	101	86	76	60	50	43	22 S 7
22 S 8		8600	325	279	244	229	217	205	195	186	177	170	163	130	108	93	81	65	54	46	22 S 8
24 S 8		9000	340	291	255	240	227	215	204	194	185	177	170	136	113	97	85	68	57	49	24 S 8
14 S 4	27'-0"	3630	134	115	101	95	89	85	80	77	73	70	67	54	45	38	34	—	—	—	14 S 4
14 S 5		4321	160	137	120	113	107	101	96	91	87	83	80	64	53	46	40	32	—	—	14 S 5
14 S 6		5284	196	168	147	138	131	124	118	112	107	102	98	78	65	56	49	39	33	—	14 S 6
14 S 7		6198	230	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	14 S 7
16 S 5		4988	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	16 S 5
16 S 6		5975	221	189	166	156	147	140	133	126	121	115	111	88	74	63	55	44	37	32	16 S 6
16 S 7		7160	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	16 S 7
16 S 8		7800	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	16 S 8
18 S 6		6716	249	213	187	176	166	157	149	142	136	130	125	100	83	71	62	50	41	36	18 S 6
18 S 7		7600	281	241	211	198	187	177	169	161	153	147	141	112	94	80	70	56	47	40	18 S 7
18 S 8		8200	304	261	228	215	203	192	182	174	166	159	152	122	101	87	76	61	51	43	18 S 8
20 S 6		7284	270	231	203	191	180	171	162	154	147	141	135	108	90	77	68	54	45	39	20 S 6
20 S 7		7800	289	248	217	204	193	183	173	165	158	151	145	116	96	83	72	58	48	41	20 S 7
20 S 8		8400	311	267	233	220	207	196	187	178	170	162	156	124	104	89	78	62	52	44	20 S 8
22 S 7		8000	296	254	222	209	197	187	178	169	161	154	148	118	99	85	74	59	49	42	22 S 7
22 S 8		8600	319	273	239	225	213	201	191	182	174	166	160	128	106	91	80	64	53	46	22 S 8
24 S 8		9000	333	285	250	235	222	210	200	190	182	174	167	133	111	95	83	67	55	48	24 S 8
14 S 4	27'-6"	3564	130	111	98	92	87	82	78	74	71	68	65	52	43	37	33	—	—	—	14 S 4
14 S 5		4242	154	132	116	109	103	97	92	88	84	80	77	62	51	44	39	31	—	—	14 S 5

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
14 S 6	27'-6"	5188	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	14 S 6
14 S 7		6085	221	189	166	156	147	140	133	126	121	115	111	88	74	63	55	44	37	32	14 S 7
16 S 5		4897	178	153	134	126	119	112	107	102	97	93	89	71	59	51	45	36	30	—	16 S 5
16 S 6		5867	213	183	160	150	142	135	128	122	116	111	107	85	71	61	53	43	35	30	16 S 6
16 S 7	27'-0"	7030	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	16 S 7
16 S 8		7800	284	243	213	200	189	179	170	162	155	148	142	114	95	81	71	57	47	41	16 S 8
18 S 6		6594	240	206	180	169	160	152	144	137	131	125	120	96	80	69	60	48	40	34	18 S 6
18 S 7		7600	276	237	207	195	184	174	166	158	151	144	138	110	92	79	69	55	46	39	18 S 7
18 S 8	26'-6"	8200	298	255	224	210	199	188	179	170	163	155	149	119	99	85	75	60	50	43	18 S 8
20 S 6		7152	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37	20 S 6
20 S 7		7800	284	243	213	200	189	179	170	162	155	148	142	114	95	81	71	57	47	41	20 S 7
20 S 8		8400	305	261	229	215	203	193	183	174	166	159	153	122	102	87	76	61	51	44	20 S 8
22 S 7	26'-0"	8000	291	249	218	205	194	184	175	166	159	152	146	116	97	83	73	58	48	42	22 S 7
22 S 8		8600	313	268	235	221	209	198	188	179	171	163	157	125	104	89	78	63	52	45	22 S 8
24 S 8		9000	327	280	245	231	218	207	196	187	178	171	164	131	109	93	82	65	54	47	24 S 8
14 S 4	28'-0"	3500	125	107	94	88	83	79	75	71	68	65	63	50	42	36	31	—	—	—	14 S 4
14 S 5		4167	149	128	112	105	99	94	89	85	81	78	75	60	50	43	37	30	—	—	14 S 5
14 S 6		5095	182	156	137	128	121	115	109	104	99	95	91	73	61	52	46	36	30	—	14 S 6
14 S 7		5976	213	183	160	150	142	135	128	122	116	111	107	85	71	61	53	43	35	30	14 S 7
16 S 5	27'-6"	4810	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	16 S 5
16 S 6		5762	206	177	155	145	137	130	124	118	112	107	103	82	69	59	52	41	34	—	16 S 6
16 S 7		6905	247	212	185	174	165	156	148	141	135	129	124	99	82	71	62	49	41	35	16 S 7
16 S 8		7800	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	16 S 8
18 S 6	27'-0"	6476	231	198	173	163	154	146	139	132	126	121	116	92	77	66	58	46	38	33	18 S 6
18 S 7		7600	271	232	203	191	181	171	163	155	148	141	136	108	90	77	68	54	45	39	18 S 7
18 S 8		8200	293	251	220	207	195	185	176	167	160	153	147	117	98	84	73	59	49	42	18 S 8
20 S 6		7024	251	215	188	177	167	159	151	143	137	131	126	100	84	72	63	50	42	36	20 S 6
20 S 7	26'-6"	7800	279	239	209	197	186	176	167	159	152	146	140	112	93	80	70	56	46	40	20 S 7
20 S 8		8400	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	20 S 8
22 S 7		8000	286	245	215	202	191	181	172	163	156	149	143	114	95	82	72	57	48	41	22 S 7
22 S 8		8600	307	263	230	217	205	194	184	175	167	160	154	123	102	88	77	61	51	44	22 S 8
24 S 8	26'-0"	9000	321	275	241	227	214	203	193	183	175	167	161	128	107	92	80	64	53	46	24 S 8
16 S 5		4725	166	142	125	117	111	105	100	95	91	87	83	66	55	47	42	33	—	—	16 S 5
16 S 6		5661	199	171	149	140	133	126	119	114	109	104	100	80	66	57	50	40	33	—	16 S 6
16 S 7		6784	238	204	179	168	159	150	143	136	130	124	119	95	79	68	60	48	40	34	16 S 7
16 S 8	26'-6"	7800	274	235	206	193	183	173	164	157	149	143	137	110	91	78	69	55	46	39	16 S 8
18 S 6		6363	223	191	167	157	149	141	134	127	122	116	112	89	74	64	56	45	37	32	18 S 6
18 S 7		7600	267	229	200	188	178	169	160	153	146	139	134	107	89	76	67	53	44	38	18 S 7
18 S 8		8200	288	247	216	203	192	182	173	165	157	150	144	115	96	82	72	58	48	41	18 S 8
20 S 6	26'-0"	6901	242	207	182	171	161	153	145	138	132	126	121	97	81	69	61	48	40	35	20 S 6
20 S 7		7800	274	235	206	193	183	173	164	157	149	143	137	110	91	78	69	55	46	39	20 S 7
20 S 8		8400	295	253	221	208	197	186	177	169	161	154	148	118	98	84	74	59	49	42	20 S 8
22 S 7		8000	281	241	211	198	187	177	169	161	153	147	141	112	94	80	70	56	47	40	22 S 7
22 S 8	25'-6"	8600	302	259	227	213	201	191	181	173	165	158	151	121	101	86	76	60	50	43	22 S 8
24 S 8		9000	316	271	237	223	211	200	190	181	172	165	158	126	105	90	79	63	53	45	24 S 8
16 S 5		4644	160	137	120	113	107	101	96	91	87	83	80	64	53	46	40	32	—	—	16 S 5
16 S 6		5563	192	165	144	136	128	121	115	110	105	100	96	77	64	55	48	38	32	—	16 S 6
16 S 7	25'-0"	6667	230	197	173	162	153	145	138	131	125	120	115	92	77	66	58	46	38	33	16 S 7
16 S 8		7724	266	228	200	188	177	168	160	152	145	139	133	106	89	76	67	53	44	38	16 S 8
18 S 6		6253	216	185	162	152	144	136	130	123	118	113	108	86	72	62	54	43	36	31	18 S 6
18 S 7		7540	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37	18 S 7
18 S 8	24'-6"	8200	283	243	212	200	189	179	170	162	154	148	142	113	94	81	71	57	47	40	18 S 8

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																			Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"		
20 S 6	29'-0"	6782	234	201	176	165	156	148	140	134	128	122	117	94	78	67	59	47	39	33	20 S 6	
20 S 7		7800	269	231	202	190	179	170	161	154	147	140	135	108	90	77	67	54	45	38	20 S 7	
20 S 8		8400	290	249	218	205	193	183	174	166	158	151	145	116	97	83	73	58	48	41	20 S 8	
22 S 7		8000	276	237	207	195	184	174	166	158	151	144	138	110	92	79	69	55	46	39	22 S 7	
22 S 8		8600	297	255	223	210	198	188	178	170	162	155	149	119	99	85	74	59	49	42	22 S 8	
24 S 8		9000	310	266	233	219	207	196	186	177	169	162	155	124	103	89	78	62	52	44	24 S 8	
16 S 5	29'-6"	4565	155	133	116	109	103	98	93	89	85	81	78	62	52	44	39	31	—	—	16 S 5	
16 S 6		5469	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	16 S 6	
16 S 7		6554	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	16 S 7	
16 S 8		7593	257	220	193	181	171	162	154	147	140	134	129	103	86	73	64	51	43	37	16 S 8	
18 S 6		6147	208	178	156	147	139	131	125	119	113	109	104	83	69	59	52	42	35	30	18 S 6	
18 S 7		7412	251	215	188	177	167	159	151	143	137	131	126	100	84	72	63	50	42	36	18 S 7	
18 S 8		8200	278	238	209	196	185	176	167	159	152	145	139	111	93	79	70	56	46	40	18 S 8	
20 S 6		6667	226	194	170	160	151	143	136	129	123	118	113	90	75	65	57	45	38	32	20 S 6	
20 S 7		7800	264	226	198	186	176	167	158	151	144	138	132	106	88	75	66	53	44	38	20 S 7	
20 S 8		8400	285	244	214	201	190	180	171	163	155	149	143	114	95	81	71	57	47	41	20 S 8	
22 S 7		8000	271	232	203	191	181	171	163	155	148	141	136	108	90	77	68	54	45	39	22 S 7	
22 S 8		8600	292	250	219	206	195	184	175	167	159	152	146	117	97	83	73	58	49	42	22 S 8	
24 S 8		9000	305	261	229	215	203	193	183	174	166	159	153	122	102	87	76	61	51	44	24 S 8	
16 S 5		4489	150	129	113	106	100	95	90	86	82	78	75	60	50	43	38	30	—	—	16 S 5	
16 S 6		5378	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	16 S 6	
16 S 7		6444	215	184	161	152	143	136	129	123	117	112	108	86	72	61	54	43	36	31	16 S 7	
16 S 8		7467	249	213	187	176	166	157	149	142	136	130	125	100	83	71	62	50	41	36	16 S 8	
18 S 6		6044	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	18 S 6	
18 S 7		7289	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	18 S 7	
18 S 8		8200	273	234	205	193	182	172	164	156	149	142	137	109	91	78	68	55	45	39	18 S 8	
20 S 6		6556	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	20 S 6	
20 S 7		7800	260	223	195	184	173	164	156	149	142	136	130	104	87	74	65	52	43	37	20 S 7	
20 S 8		8400	280	240	210	198	187	177	168	160	153	146	140	112	93	80	70	56	47	40	20 S 8	
22 S 7		8000	267	229	200	188	178	169	160	153	146	139	134	107	89	76	67	53	44	38	22 S 7	
22 S 8		8600	287	246	215	203	191	181	172	164	157	150	144	115	96	82	72	57	48	41	22 S 8	
24 S 8		9000	300	257	225	212	200	189	180	171	164	157	150	120	100	86	75	60	50	43	24 S 8	
16 S 5	30'-0"	4415	145	124	109	102	97	92	87	83	79	76	73	58	48	41	36	—	—	—	16 S 5	
16 S 6		5290	173	148	130	122	115	109	104	99	94	90	87	69	58	49	43	35	—	—	16 S 6	
16 S 7		6339	208	178	156	147	139	131	125	119	113	109	104	83	69	59	52	42	35	30	16 S 7	
16 S 8		7344	241	207	181	170	161	152	145	138	131	126	121	96	80	69	60	48	40	34	16 S 8	
18 S 6		5945	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	18 S 6	
18 S 7		7169	235	201	176	166	157	148	141	134	128	123	118	94	78	67	59	47	39	34	18 S 7	
18 S 8		8200	269	231	202	190	179	170	161	154	147	140	135	108	90	77	67	54	45	38	18 S 8	
20 S 6		6448	211	181	158	149	141	133	127	121	115	110	106	84	70	60	53	42	35	30	20 S 6	
20 S 7		7800	256	219	192	181	171	162	154	146	140	134	128	102	85	73	64	51	43	37	20 S 7	
20 S 8		8400	275	236	206	194	183	174	165	157	150	143	138	110	92	79	69	55	46	39	20 S 8	
22 S 7		8000	262	225	197	185	175	165	157	150	143	137	131	105	87	75	66	52	44	37	22 S 7	
22 S 8		8600	282	242	212	199	188	178	169	161	154	147	141	113	94	81	71	56	47	40	22 S 8	
24 S 8		9000	295	253	221	208	197	186	177	169	161	154	148	118	98	84	74	59	49	42	24 S 8	
16 S 5		4344	140	120	105	99	93	88	84	80	76	73	70	56	47	40	35	—	—	—	16 S 5	
16 S 6		5204	168	144	126	119	112	106	101	96	92	88	84	67	56	48	42	34	—	—	16 S 6	
16 S 7		6237	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	16 S 7	
16 S 8		7226	233	200	175	164	155	147	140	133	127	122	117	93	78	67	58	47	39	33	16 S 8	
18 S 6		5849	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	18 S 6	
18 S 7		7054	228	195	171	161	152	144	137	130	124	119	114	91	76	65	57	46	38	33	18 S 7	
18 S 8		8172	264	226	198	186	176	167	158	151	144	138	132	106	88	75	66	53	44	38	18 S 8	

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
20 S 6	31'-0"	6344	205	176	154	145	137	129	123	117	112	107	103	82	68	59	51	41	34	—	20 S 6
20 S 7		7699	248	213	186	175	165	157	149	142	135	129	124	99	83	71	62	50	41	35	20 S 7
20 S 8		8400	271	232	203	191	181	171	163	155	148	141	136	108	90	77	68	54	45	39	20 S 8
22 S 7		8000	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	22 S 7
22 S 8		8600	277	237	208	196	185	175	166	158	151	145	139	111	92	79	69	55	46	40	22 S 8
24 S 8		9000	290	249	218	205	193	183	174	166	158	151	145	116	97	83	73	58	48	41	24 S 8
16 S 5	31'-6"	4275	136	117	102	96	91	86	82	78	74	71	68	54	45	39	34	—	—	—	16 S 5
16 S 6		5122	163	140	122	115	109	103	98	93	89	85	82	65	54	47	41	33	—	—	16 S 6
16 S 7		6138	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	16 S 7
16 S 8		7111	226	194	170	160	151	143	136	129	123	118	113	90	75	65	57	45	38	32	16 S 8
18 S 6		5757	183	157	137	129	122	116	110	105	100	95	92	73	61	52	46	37	30	—	18 S 6
18 S 7		6942	220	189	165	155	147	139	132	126	120	115	110	88	73	63	55	44	37	31	18 S 7
18 S 8		8042	255	219	191	180	170	161	153	146	139	133	128	102	85	73	64	51	42	36	18 S 8
20 S 6		6243	198	170	149	140	132	125	119	113	108	103	99	79	66	57	50	40	33	—	20 S 6
20 S 7		7577	241	207	181	170	161	152	145	138	131	126	121	96	80	69	60	48	40	34	20 S 7
20 S 8		8400	267	229	200	188	178	169	160	153	146	139	134	107	89	76	67	53	44	38	20 S 8
22 S 7		8000	254	218	191	179	169	160	152	145	139	133	127	102	85	73	64	51	42	36	22 S 7
22 S 8		8600	273	234	205	193	182	172	164	156	149	142	137	109	91	78	68	55	45	39	22 S 8
24 S 8		9000	286	245	215	202	191	181	172	163	156	149	143	114	95	82	72	57	48	41	24 S 8
16 S 5	32'-0"	4208	132	113	99	93	88	83	79	75	72	69	66	53	44	38	33	—	—	—	16 S 5
16 S 6		5042	158	135	119	112	105	100	95	90	86	82	79	63	53	45	40	32	—	—	16 S 6
16 S 7		6042	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	16 S 7
16 S 8		7000	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	16 S 8
18 S 6		5667	177	152	133	125	118	112	106	101	97	92	89	71	59	51	44	35	—	—	18 S 6
18 S 7		6833	214	183	161	151	143	135	128	122	117	112	107	86	71	61	54	43	36	31	18 S 7
18 S 8		7917	247	212	185	174	165	156	148	141	135	129	124	99	82	71	62	49	41	35	18 S 8
20 S 6		6146	192	165	144	136	128	121	115	110	105	100	96	77	64	55	48	38	32	—	20 S 6
20 S 7		7458	233	200	175	164	155	147	140	133	127	122	117	93	78	67	58	47	39	33	20 S 7
20 S 8		8400	263	225	197	186	175	166	158	150	143	137	132	105	88	75	66	53	44	38	20 S 8
22 S 7		8000	250	214	188	176	167	158	150	143	136	130	125	100	83	71	63	50	42	36	22 S 7
22 S 8		8600	269	231	202	190	179	170	161	154	147	140	135	108	90	77	67	54	45	38	22 S 8
24 S 8		9000	281	241	211	198	187	177	169	161	153	147	141	112	94	80	70	56	47	40	24 S 8
18 S 6	32'-6"	5579	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	18 S 6
18 S 7		6728	207	177	155	146	138	131	124	118	113	108	104	83	69	59	52	41	34	30	18 S 7
18 S 8		7795	240	206	180	169	160	152	144	137	131	125	120	96	80	69	60	48	40	34	18 S 8
20 S 6		6051	186	159	140	131	124	117	112	106	101	97	93	74	62	53	47	37	31	—	20 S 6
20 S 7		7344	226	194	170	160	151	143	136	129	123	118	113	90	75	65	57	45	38	32	20 S 7
20 S 8		8400	258	221	194	182	172	163	155	147	141	135	129	103	86	74	65	52	43	37	20 S 8
22 S 7		7897	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	22 S 7
22 S 8		8600	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	22 S 8
24 S 8		9000	277	237	208	196	185	175	166	158	151	145	139	111	92	79	69	55	46	40	24 S 8
18 S 6	33'-0"	5495	167	143	125	118	111	105	100	95	91	87	84	67	56	48	42	33	—	—	18 S 6
18 S 7		6626	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	18 S 7
18 S 8		7677	233	200	175	164	155	147	140	133	127	122	117	93	78	67	58	47	39	33	18 S 8
20 S 6		5960	181	155	136	128	121	114	109	103	99	94	91	72	60	52	45	36	30	—	20 S 6
20 S 7		7232	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	20 S 7
20 S 8		8400	255	219	191	180	170	161	153	146	139	133	128	102	85	73	64	51	42	36	20 S 8
22 S 7		7778	236	202	177	167	157	149	142	135	129	123	118	94	79	67	59	47	39	34	22 S 7
22 S 8		8600	261	224	196	184	174	165	157	149	142	136	131	104	87	75	65	52	43	37	22 S 8
24 S 8		9000	273	234	205	193	182	172	164	156	149	142	137	109	91	78	68	55	45	39	24 S 8
18 S 6	33'-6"	5413	162	139	122	114	108	102	97	93	88	85	81	65	54	46	41	32	—	—	18 S 6
18 S 7		6527	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	18 S 7

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																	Joist Type No.	
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"		7'-0"
18 S 8	33'-6"	7562	226	194	170	160	151	143	136	129	123	118	113	90	75	65	57	45	38	32	18 S 8
20 S 6		5871	175	150	131	124	117	111	105	100	95	91	88	70	58	50	44	35	—	—	20 S 6
20 S 7		7124	213	183	160	150	142	135	128	122	116	111	107	85	71	61	53	43	35	30	20 S 7
20 S 8		8358	249	213	187	176	166	157	149	142	136	130	125	100	83	71	62	50	41	36	20 S 8
22 S 7		7662	229	196	172	162	153	145	137	131	125	119	115	92	76	65	57	46	38	33	22 S 7
22 S 8		8600	257	220	193	181	171	162	154	147	140	134	129	103	86	73	64	51	43	37	22 S 8
24 S 8		9000	269	231	202	190	179	170	161	154	147	140	135	108	90	77	67	54	45	38	24 S 8
18 S 6	34'-0"	5333	157	135	118	111	105	99	94	90	86	82	79	63	52	45	39	31	—	—	18 S 6
18 S 7		6431	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	18 S 7
18 S 8		7451	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	18 S 8
20 S 6		5784	170	146	128	120	113	107	102	97	93	89	85	68	57	49	43	34	—	—	20 S 6
20 S 7		7020	206	177	155	145	137	130	124	118	112	107	103	82	69	59	52	41	34	—	20 S 7
20 S 8		8235	242	207	182	171	161	153	145	138	132	126	121	97	81	69	61	48	40	35	20 S 8
22 S 7		7549	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	22 S 7
22 S 8		8600	253	217	190	179	169	160	152	145	138	132	127	101	84	72	63	51	42	36	22 S 8
24 S 8		9000	265	227	199	187	177	167	159	151	145	138	133	106	88	76	66	53	44	38	24 S 8
18 S 6		34'-6"	5256	152	130	114	107	101	96	91	87	83	79	76	61	51	43	38	30	—	—
18 S 7		6338	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	18 S 7
18 S 8		7343	213	183	160	150	142	135	128	122	116	111	107	85	71	61	53	43	35	30	18 S 8
20 S 6		5700	165	141	124	116	110	104	99	94	90	86	83	66	55	47	41	33	—	—	20 S 6
20 S 7		6918	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	20 S 7
20 S 8		8116	235	201	176	166	157	148	141	134	128	123	118	94	78	67	59	47	39	34	20 S 8
22 S 7		7440	216	185	162	152	144	136	130	123	118	113	108	86	72	62	54	43	36	31	22 S 7
22 S 8		8600	249	213	187	176	166	157	149	142	136	130	125	100	83	71	62	50	41	36	22 S 8
24 S 8		9000	261	224	196	184	174	165	157	149	142	136	131	104	87	75	65	52	43	37	24 S 8
18 S 6		35'-0"	5181	148	127	111	104	99	93	89	85	81	77	74	59	49	42	37	30	—	—
18 S 7		6248	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	18 S 7
18 S 8		7238	207	177	155	146	138	131	124	118	113	108	104	83	69	59	52	41	34	30	18 S 8
20 S 6		5619	161	138	121	114	107	102	97	92	88	84	81	64	54	46	40	32	—	—	20 S 6
20 S 7		6819	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	20 S 7
20 S 8		8000	229	196	172	162	153	145	137	131	125	119	115	92	76	65	57	46	38	33	20 S 8
22 S 7		7333	210	180	158	148	140	133	126	120	115	110	105	84	70	60	53	42	35	30	22 S 7
22 S 8		8600	246	211	185	174	164	155	148	141	134	128	123	98	82	70	62	49	41	35	22 S 8
24 S 8		9000	257	220	193	181	171	162	154	147	140	134	129	103	86	73	64	51	43	37	24 S 8
18 S 6		35'-6"	5108	144	123	108	102	96	91	86	82	79	75	72	58	48	41	36	—	—	—
18 S 7		6160	174	149	131	123	116	110	104	99	95	91	87	70	58	50	44	35	—	—	18 S 7
18 S 8		7136	201	172	151	142	134	127	121	115	110	105	101	80	67	57	50	40	33	—	18 S 8
20 S 6		5540	156	134	117	110	104	99	94	89	85	81	78	62	52	45	39	31	—	—	20 S 6
20 S 7		6723	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	20 S 7
20 S 8		7887	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	20 S 8
22 S 7		7230	204	175	153	144	136	129	122	117	111	106	102	82	68	58	51	41	34	—	22 S 7
22 S 8		8563	241	207	181	170	161	152	145	138	131	126	121	96	80	69	60	48	40	34	22 S 8
24 S 8		9000	254	218	191	179	169	160	152	145	139	133	127	102	85	73	64	51	42	36	24 S 8
18 S 6		36'-0"	5037	140	120	105	99	93	88	84	80	76	73	70	56	47	40	35	—	—	—
18 S 7		6074	169	145	127	119	113	107	101	97	92	88	85	68	56	48	42	34	—	—	18 S 7
18 S 8		7037	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	18 S 8
20 S 6		5463	152	130	114	107	101	96	91	87	83	79	76	61	51	43	38	30	—	—	20 S 6
20 S 7		6630	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	20 S 7
20 S 8		7778	216	185	162	152	144	136	130	123	118	113	108	86	72	62	54	43	36	31	20 S 8
22 S 7		7130	198	170	149	140	132	125	119	113	108	103	99	79	66	57	50	40	33	—	22 S 7

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																			Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"		
22 S 8	36'-0"	8444	235	201	176	166	157	148	141	134	128	123	118	94	78	67	59	47	39	34	22 S 8	
24 S 8		9000	250	214	188	176	167	158	150	143	136	130	125	100	83	71	63	50	42	36	24 S 8	
20 S 6	36'-6"	5388	148	127	111	104	99	93	89	85	81	77	74	59	49	42	37	30	—	—	20 S 6	
20 S 7		6539	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	20 S 7	
20 S 8		7671	210	180	158	148	140	133	126	120	115	110	105	84	70	60	53	42	35	30	20 S 8	
22 S 7		7032	193	165	145	136	129	122	116	110	105	101	97	77	64	55	48	39	32	—	22 S 7	
22 S 8		8329	228	195	171	161	152	144	137	130	124	119	114	91	76	65	57	46	38	33	22 S 8	
24 S 8		9000	247	212	185	174	165	156	148	141	135	129	124	99	82	71	62	49	41	35	24 S 8	
20 S 6	37'-0"	5315	144	123	108	102	96	91	86	82	79	75	72	58	48	41	36	—	—	—	20 S 6	
20 S 7		6450	174	149	131	123	116	110	104	99	95	91	87	70	58	50	44	35	—	—	20 S 7	
20 S 8		7568	205	176	154	145	137	129	123	117	112	107	103	82	68	59	51	41	34	—	20 S 8	
22 S 7		6937	187	160	140	132	125	118	112	107	102	98	94	75	62	53	47	37	31	—	22 S 7	
22 S 8		8216	222	190	167	157	148	140	133	127	121	116	111	89	74	63	56	44	37	32	22 S 8	
24 S 8		9000	243	208	182	172	162	153	146	139	133	127	122	97	81	69	61	49	40	35	24 S 8	
20 S 6	37'-6"	5244	140	120	105	99	93	88	84	80	76	73	70	56	47	40	35	—	—	—	20 S 6	
20 S 7		6364	170	146	128	120	113	107	102	97	93	89	85	68	57	49	43	34	—	—	20 S 7	
20 S 8		7467	199	171	149	140	133	126	119	114	109	104	100	80	66	57	50	40	33	—	20 S 8	
22 S 7		6844	183	157	137	129	122	116	110	105	100	95	92	73	61	52	46	37	30	—	22 S 7	
22 S 8		8107	216	185	162	152	144	136	130	123	118	113	108	86	72	62	54	43	36	31	22 S 8	
24 S 8		8889	237	203	178	167	158	150	142	135	129	124	119	95	79	68	59	47	39	34	24 S 8	
20 S 6	38'-0"	5175	136	117	102	96	91	86	82	78	74	71	68	54	45	39	34	—	—	—	20 S 6	
20 S 7		6281	165	141	124	116	110	104	99	94	90	86	83	66	55	47	41	33	—	—	20 S 7	
20 S 8		7368	194	166	146	137	129	123	116	111	106	101	97	78	65	55	49	39	32	—	20 S 8	
22 S 7		6754	178	153	134	126	119	112	107	102	97	93	89	71	59	51	45	36	30	—	22 S 7	
22 S 8		8000	211	181	158	149	141	133	127	121	115	110	106	84	70	60	53	42	35	30	22 S 8	
24 S 8		8772	231	198	173	163	154	146	139	132	126	121	116	92	77	66	58	46	38	33	24 S 8	
20 S 6	38'-6"	5108	133	114	100	94	89	84	80	76	73	69	67	53	44	38	33	—	—	—	20 S 6	
20 S 7		6199	161	138	121	114	107	102	97	92	88	84	81	64	54	46	40	32	—	—	20 S 7	
20 S 8		7273	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	20 S 8	
22 S 7		6667	173	148	130	122	115	109	104	99	94	90	87	69	58	49	43	35	—	—	22 S 7	
22 S 8		7896	205	176	154	145	137	129	123	117	112	107	103	82	68	59	51	41	34	—	22 S 8	
24 S 8		8658	225	193	169	159	150	142	135	129	123	117	113	90	75	64	56	45	37	32	24 S 8	
20 S 6	39'-0"	5043	129	111	97	91	86	81	77	74	70	67	65	52	43	37	32	—	—	—	20 S 6	
20 S 7		6120	157	135	118	111	105	99	94	90	86	82	79	63	52	45	39	31	—	—	20 S 7	
20 S 8		7179	184	158	138	130	123	116	110	105	100	96	92	74	61	53	46	37	31	—	20 S 8	
22 S 7		6581	169	145	127	119	113	107	101	97	92	88	85	68	56	48	42	34	—	—	22 S 7	
22 S 8		7795	200	171	150	141	133	126	120	114	109	104	100	80	67	57	50	40	33	—	22 S 8	
24 S 8		8547	219	188	164	155	146	138	131	125	119	114	110	88	73	63	55	44	36	31	24 S 8	
20 S 6	39'-6"	4979	126	108	95	89	84	80	76	72	69	66	63	50	42	36	32	—	—	—	20 S 6	
20 S 7		6042	153	131	115	108	102	97	92	87	83	80	77	61	51	44	38	31	—	—	20 S 7	
20 S 8		7087	179	153	134	126	119	113	107	102	98	93	90	72	60	51	45	36	30	—	20 S 8	
22 S 7		6498	165	141	124	116	110	104	99	94	90	86	83	66	55	47	41	33	—	—	22 S 7	
22 S 8		7696	195	167	146	138	130	123	117	111	106	102	98	78	65	56	49	39	32	—	22 S 8	
24 S 8		8439	214	183	161	151	143	135	128	122	117	112	107	86	71	61	54	43	36	31	24 S 8	
20 S 6	40'-0"	4917	123	105	92	87	82	78	74	70	67	64	62	49	41	35	31	—	—	—	20 S 6	
20 S 7		5967	149	128	112	105	99	94	89	85	81	78	75	60	50	43	37	30	—	—	20 S 7	
20 S 8		7000	175	150	131	124	117	111	105	100	95	91	88	70	58	50	44	35	—	—	20 S 8	
22 S 7		6417	160	137	120	113	107	101	96	91	87	83	80	64	53	46	40	32	—	—	22 S 7	
22 S 8		7600	190	163	143	134	127	120	114	109	104	99	95	76	63	54	48	38	32	—	22 S 8	
24 S 8		8333	208	178	156	147	139	131	125	119	113	109	104	83	69	59	52	42	35	30	24 S 8	

* Allowable uniform total load per foot of joist.

DESIGN TABLE—"S" SERIES STEEL JOISTS

Joist Type No.	Clear Span	Total Safe Load Pounds	TOTAL SAFE LOADS IN POUNDS PER SQUARE FOOT FOR VARIOUS JOIST SPACINGS																		Joist Type No.
			*12"	14"	16"	17"	18"	19"	20"	21"	22"	23"	24"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"	7'-0"	
22 S 7	40'-6"	6337	156	134	117	110	104	99	94	89	85	81	78	62	52	45	39	31	—	—	22 S 7
22 S 8		7506	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	22 S 8
24 S 8		8230	203	174	152	143	135	128	122	116	111	106	102	81	68	58	51	41	34	—	24 S 8
22 S 7	41'-0"	6260	153	131	115	108	102	97	92	87	83	80	77	61	51	44	38	31	—	—	22 S 7
22 S 8		7415	181	155	136	128	121	114	109	103	99	94	91	72	60	52	45	36	30	—	22 S 8
24 S 8		8130	198	170	149	140	132	125	119	113	108	103	99	79	66	57	50	40	33	—	24 S 8
22 S 7	41'-6"	6185	149	128	112	105	99	94	89	85	81	78	75	60	50	43	37	30	—	—	22 S 7
22 S 8		7325	177	152	133	125	118	112	106	101	97	92	89	71	59	51	44	35	—	—	22 S 8
24 S 8		8032	194	166	146	137	129	123	116	111	106	101	97	78	65	55	49	39	32	—	24 S 8
22 S 7	42'-0"	6111	146	125	110	103	97	92	88	83	80	76	73	58	49	42	37	—	—	—	22 S 7
22 S 8		7238	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	22 S 8
24 S 8		7937	189	162	142	133	126	119	113	108	103	99	95	76	63	54	47	38	31	—	24 S 8
22 S 7	42'-6"	6039	142	122	107	100	95	90	85	81	77	74	71	57	47	41	36	—	—	—	22 S 7
22 S 8		7153	168	144	126	119	112	106	101	96	92	88	84	67	56	48	42	34	—	—	22 S 8
24 S 8		7843	185	159	139	131	123	117	111	106	101	97	93	74	62	53	46	37	31	—	24 S 8
22 S 7	43'-0"	5969	139	119	104	98	93	88	83	79	76	73	70	56	46	40	35	—	—	—	22 S 7
22 S 8		7070	164	141	123	116	109	104	98	94	89	86	82	66	55	47	41	33	—	—	22 S 8
24 S 8		7752	180	154	135	127	120	114	108	103	98	94	90	72	60	51	45	36	30	—	24 S 8
22 S 7	43'-6"	5900	136	117	102	96	91	86	82	78	74	71	68	54	45	39	34	—	—	—	22 S 7
22 S 8		6989	161	138	121	114	107	102	97	92	88	84	81	64	54	46	40	32	—	—	22 S 8
24 S 8		7663	176	151	132	124	117	111	106	101	96	92	88	70	59	50	44	35	—	—	24 S 8
22 S 7	44'-0"	5833	133	114	100	94	89	84	80	76	73	69	67	53	44	38	33	—	—	—	22 S 7
22 S 8		6909	157	135	118	111	105	99	94	90	86	82	79	63	52	45	39	31	—	—	22 S 8
24 S 8		7576	172	147	129	121	115	109	103	98	94	90	86	69	57	49	43	34	—	—	24 S 8
24 S 8	44'-6"	7491	168	144	126	119	112	106	101	96	92	88	84	67	56	48	42	34	—	—	24 S 8
24 S 8	45'-0"	7407	165	141	124	116	110	104	99	94	90	86	83	66	55	47	41	33	—	—	24 S 8
24 S 8	45'-6"	7326	161	138	121	114	107	102	97	92	88	84	81	64	54	46	40	32	—	—	24 S 8
24 S 8	46'-0"	7246	153	135	119	112	105	100	95	90	86	82	79	63	53	45	40	32	—	—	24 S 8
24 S 8	46'-6"	7168	154	132	116	109	103	97	92	88	84	80	77	62	51	44	39	31	—	—	24 S 8
24 S 8	47'-0"	7092	151	129	113	107	101	95	91	86	82	79	76	60	50	43	38	30	—	—	24 S 8
24 S 8	47'-6"	7018	148	127	111	104	99	93	89	85	81	77	74	59	49	42	37	30	—	—	24 S 8
24 S 8	48'-0"	6944	145	124	109	102	97	92	87	83	79	76	73	58	48	41	36	—	—	—	24 S 8

* Allowable uniform total load per foot of joist.





Connecticut Light and Power Co.'s administration building on Wilbur Cross Parkway at Berlin, Conn., contains Bethlehem "L" Series Steel Joists. Architect: Douglas Orr, New Haven; general contractor: W. J. Megin, Inc., Naugatuck, Conn.

Bethlehem "S" Series Joists were used in the floor structures of The Texas Company's Buffalo, N. Y., office building. Architect: Duane Lyman and Associates; general contractor: George W. Walker and Sons, Inc. Both are Buffalo firms.

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